

SUMTER COUNTY BOARD OF COMMISSIONERS
EXECUTIVE SUMMARY

SUBJECT: Award JA Floyd RFP 154-0-2010/AT Division 17 Security Vestibule Re-Bid and approve the Change Order to Greg Construction's contract (Staff recommends approval).

REQUESTED ACTION: **Award JA Floyd RFP 154-0-2010/AT and Approve the Change Order to Greg Construction's contract.**

☐ Work Session (Report Only) **DATE OF MEETING:** 5/11/2010
☒ Regular Meeting ☐ Special Meeting

CONTRACT: ☒ N/A Vendor/Entity: JA Floyd
Effective Date: _____ Termination Date: _____
Managing Division / Dept: Facilities Development and Maintenance

BUDGET IMPACT: \$283,113.26
☒ Annual **FUNDING SOURCE:** Capital
☐ Capital **EXPENDITURE ACCOUNT:** Security Vestibule 305-100-519-6246
☐ N/A

HISTORY/FACTS/ISSUES:

RFP 154-0-2010/AT Division 17 Security Vestibule Re-Bid was broadcast on 3-26-2010. Proposals were due on 4-27-2010 at 10:00am and were opened at 10:05am in Room 142, located at the Government Offices, 910 North Main Street, Bushnell, FL 33513.

One proposal from JA Floyd was received in the amount of \$283,113.26.

The Selection Review Committee met on 4-30-2010 at 10:00am in Room 142 to discuss and review the proposal.

The Selection Committee agreed to recommend JA Floyd in the form of a Change Order to Greg Construction's contract. Greg Construction is the GC for the Security Vestibule project.

Attached are the following items: legal ad information, minutes, JA Floyd's proposal, and the Change Order request.

REQUEST FOR PROPOSALS

Notice is hereby given that the Board of County Commissioners of Sumter County, Florida, will be receiving proposals for the following:

“SUMTER COUNTY DIVISION 17 SECURITY VESTIBULE RE-BID”

Detailed proposals are available upon request by calling (352) 569-6067, by coming to the County Commissioners Office, Budget & Purchasing Department, Room 220, Sumter County Government Offices, 910 North Main Street, Bushnell, Florida, or by contacting Demand Star at 1-800-711-1712 or www.DemandStar.com.

All inquiries and questions regarding this RFP must be made only to the contact identified below and shall be made in writing by fax, e-mail, or mail:

Amanda Taylor, Budget & Purchasing Coordinator

Mailing Address: 910 N. Main Street, Suite 220

Bushnell, FL 33513

E-mail: Amanda.Taylor@sumtercountyfl.gov

Fax: (352) 793-0207

The deadline for submission of questions relating to the RFP shall be April 9, 2010 at 5:00 PM. Proposals must be received by the County no later than 10:00am, April 27, 2010. Late submittals will be rejected and returned unopened to the Proposer. Proposals must be firmly sealed in packaging that is clearly marked on the outside: “Board of Sumter County Commissioners Division 17 Security Vestibule Re-Bid RFP 154-0-2010\AT”. Sealed Proposals must be mailed or delivered to Mrs. Amanda Taylor at the above listed address.

Upon submission, all Proposals become the property of the County, who has the right to use any or all ideas presented in any Proposal submitted in response to this RFP, whether or not the Proposal is accepted. Proposals will be opened immediately following the due date and time.

BOARD OF COUNTY COMMISSIONERS

SUMTER COUNTY, FLORIDA

PUBLISH 3/26/2010

RFP 154-0-2010/AT Division 17 Security Vestibule Re-Bid, bid opening meeting held on 4-26-2010 at 10:05am in Room 142 located at the Government Offices, 910 North Main Street, Bushnell, FL 33513.

Amanda Taylor, Douglas Conway, and Annette Fitzpatrick were present to represent county staff.

Amanda stated following the opening, the Selection Committee would meet on 4-30-2010 at 10:00am in Room 142. The Selection Committee recommendation would be taken to the Sumter County Board of County Commissioners on 5-11-2010.

Amanda stated no bids were received late and one bid was received on time.

The one bid received came from JA Floyd, Inc. in the amount of \$283,113.26.

The meeting adjourned at 10:07am.

RFP 154-0-2010/AT Division 17 Security Vestibule Re-Bid Selection Review
Committee meeting held on 4-30-2010 at 10:00am in Room 142 located at the
Government Offices, 910 North Main Street, Bushnell, FL 33513.

Amanda Taylor, Annette Fitzpatrick, Douglas Conway, and Bob Kegan were present to represent county staff. Jeff Pfent with Greg Construction, the general contractor for the Security Vestibule construction was present.

Amanda stated the recommendation from the Committee would be taken to the Sumter County Board of County Commissioners on 5-11-2010.

Doug stated Joe Rispoli and Lt. Mike Smith, members on the Selection Committee were absent.

Doug stated his recommendation was to approve JA Floyd with a Change Order to Greg Construction's contract in the amount of \$283,113.26. Doug stated that JA Floyd was the electrician on the Security Vestibule project currently and there were no issues there. All present agreed.

The meeting adjourned at 10:15am.

PART 4
PROPOSAL DOCUMENTS
PROPOSAL COVER PAGE

Name of Firm, Entity or Organization:

J. A. Floyd, Inc.

Federal Employer Identification Number (FEIN): 59-1155410

State of Florida License Number (If Applicable): EC0002388/CBC1251842

Name of Contact Person: Floyd Daniel

Title: President

E-Mail Address: office@jafloyd.com

Mailing Address: 2148 N Crede Ave

Street Address (if different):

City, State, Zip: Crystal River, FL 34428

Telephone: 352-563-2962

Fax: 352-564-4229

Organizational Structure – Please Check One:

Corporation ☒ Partnership ☐ Proprietorship ☐ Joint Venture ☐ Other ☐

If Corporation:

Date of Incorporation: 11/19/1965

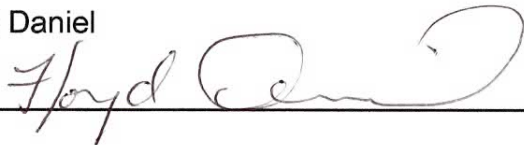
State of Incorporation: Florida

States Registered in as Foreign Corporation:

Authorized Signature:

Print Name: Floyd Daniel

Signature:



Title: President

Phone: 352-563-2962

This document must be completed and returned with your Submittal.

PROPOSER'S CERTIFICATION

Submit To: Sumter County Board of County Commissioners 910 North Main Street Bushnell, Florida, 33513 Phone 352-793-0200 Fax 352-793.0207		SUMTER COUNTY BOARD OF COUNTY COMMISSIONERS REQUEST FOR PROPOSAL (RFP) CERTIFICATION AND ADDENDA ACKNOWLEDGMENT	
DUE DATE: April 27, 2010		DUE TIME: 10:00 AM	
RFP # 154-0-2010/AT			
TITLE: Division 17 Security Vestibule Re-Bid			
VENDOR NAME: J. A. Floyd, Inc.		PHONE NUMBER: 352-563-2962	
VENDOR MAILING ADDRESS: 2148 N Crede Ave, Crystal River, FL 34428		FAX NUMBER: 352-564-4229	
CITY/STATE/ZIP: Crystal River, FL 34428		E-MAIL ADDRESS: office@jafloyd.com	
<p>"I, the undersigned, certify that I have reviewed the addenda listed below (list all addenda received to date). I understand that timely commencement will be considered in award of this RFP and that cancellation of award will be considered if commencement time is not met, and that untimely commencement may be cause for assessment of liquidated damages claims. I further certify that the services will meet or exceed the RFP requirements. I, the undersigned, declare that I have carefully examined the RFP, specifications, terms and conditions as applicable for this Request, and that I am thoroughly familiar with all provisions and the quality and type of coverage and services specified. I further declare that I have not divulged, discussed, or compared this RFP with any other Offeror and have not colluded with any Offerors or parties to an RFP whatsoever for any fraudulent purpose."</p> <p> <u>NA</u> Addendum # Addendum # Addendum # Addendum # Addendum # </p>			
<p>"I certify that this quote is made without prior understanding, agreement, or connection with any corporation, firm, or person submitting an RFP for the same material, supplies, equipment or services and is in all respects fair and without collusion or fraud. I agree to abide by all conditions of this RFP and certify that I am authorized to sign this response and that the offer is in compliance with all requirements of the RFP, including but not limited to certification requirements. In conducting offers with an agency for Sumter County Board of County Commissioners (BOCC), respondent agrees that if this proposal is accepted, the respondent will convey, sell, assign, or transfer to the Sumter County BOCC all rights, title and interest in and to all causes of action it may now or hereafter acquire under the anti-trust laws of the United States for price fixing relating to the particular commodities or services purchased or acquired by the COUNTY. At the Sumter County BOCC discretion, such assignment shall be made and become effective at the time the purchasing agency renders final payment to the respondent."</p> <p> <div style="display: flex; justify-content: space-between; align-items: flex-end;"> <div style="text-align: center;"> <u>Floyd Daniel, President</u> Authorized Agent Name, Title (Print) </div> <div style="text-align: center;">  Authorized Signature </div> <div style="text-align: right;"> <u>04/26/2010</u> Date </div> </div> </p>			
<i>This form must be completed and returned with your Submittal</i>			

STATEMENT OF TERMS AND CONDITIONS

PUBLIC ENTITY CRIME: A person or affiliate who has been placed on the convicted vendor list following a conviction for a public entity crime may not submit a Proposal/Bid on a contract to provide any goods or services to a public entity, for the construction or repair of a public building or public work, may not submit Proposals/Bids on leases of real property to a public entity, may not be awarded or perform work as a contractor, supplier, subcontractor, or consultant under a contract with any public entity, and may not transact business with any public entity in excess of the threshold amount provided in Section 287.017, for CATEGORY TWO for a period of 36 months from the date of being placed on the convicted vendor list.

INDEMNIFICATION: The Contractor agrees to indemnify and hold harmless Board of Sumter County Commissioners, and their elected officials, employees and volunteers from and against all claims, losses and expenses, including legal costs, arising out of or resulting from, the performance of this contract, provided that any such claims, damage, loss of expenses is attributed to bodily injury, sickness, disease, personal injury or death, or to injury to or destruction of tangible property including the loss or loss of use resulting there from and is caused in whole or in part by any negligent act or omission of the tenant.

PROHIBITION OF LOBBYING: During the black out period which is, the period between the time the submittals for Invitation to Bid or the Request for Proposal, or Qualifications, or information, as applicable, are received at Contracts / Purchasing and the time the Board awards the contract, no proposer, no lobbyist, principal, or other person may lobby, on behalf of a competing party in a particular procurement matter, any member of the Board, or any Board employee other than the Budget & Purchasing Manager. Violation of this provision may result in disqualification of violating party. All questions regarding this Request for Proposal (RFP) or Invitation to Bid (BID) must be submitted in writing to the Board's Budget & Purchasing Manager.

ANTI TRUST LAWS: By submission of a signed RFP or BID, the successful Vendor acknowledges compliance with all antitrust laws of the United States and the State of Florida, in order to protect the public from restraint of trade, which illegally increases prices.

CONFLICT OF INTEREST: The award of the contract hereunder is subject to the provisions of Chapter 112 of the Florida Statutes. Vendors shall disclose the name of any Officer, Director, Partner, Associate, or Agent who is also an Officer, Appointee, or Employee of any of the Boards at the time of the RFP or BID, or at the time of occurrence of the Conflict of Interest thereafter.

INTERPRETATION, CLARIFICATIONS AND ADDENDA: No oral interpretations will be made to any vendor as to the meaning of the RFP/BID Contract Documents. Any inquiry or request for interpretation received by the Budget & Purchasing Manager before the date listed herein will be given consideration. All such changes or interpretations will be made in writing in the form of an addendum and, if issued, will be distributed at or after the Pre-Proposal/Pre-Bid Conference, mailed or sent by available or electronic means to all attending prospective Submitters prior to the established RFP/BID opening date. Each Vendor shall acknowledge receipt of such addenda in the space provided. In case any Proposer/Bidder fails to acknowledge receipt of such addenda or addendum, his offer will nevertheless be construed as though it had been received and acknowledged and the submission of his bid will constitute acknowledgment of the receipt of same. All addenda are a part of the RFP/BID FORMS and each Proposer/Bidder will be bound by such addenda, whether or not received by him. It is the responsibility of each proposer/bidder to verify that he has received all addenda issued before RFP's/BID's are opened. In the case of unit price items, the quantities of work to be done and materials to be furnished under this RFP/BID Contract are to be considered as approximate only and are to be used solely for the comparison of RFP's/BID's received. The Board and/or his CONSULTANT do not expressly or by implication represent that the actual quantities involved will correspond exactly therewith; nor shall the Vendor plead misunderstanding or deception because of such estimate or quantities of work performed or material furnished in accordance with the Specifications and/or Drawings and other Proposal/Bid Documents, and it is understood that the quantities may be increased or diminished as provided herein without in any way invalidating any of the unit or lump sum prices bid.

GOVERNING LAWS AND REGULATIONS: The vendor is required to be familiar with and shall be responsible for complying with all federal, state and local laws, ordinances, rules and regulations that in any manner affect the work.

PROPRIETARY/CONFIDENTIAL INFORMATION: Vendors are hereby notified that all information submitted as part of, or in support of RFP's/BID's, will be available for public inspection ten days after opening of the RFP's/BID's or until a short list is recommended whichever comes first, in compliance with Chapter 119, and 287 of the Florida Statutes. Any person wishing to view the RFP's/BID's must make an appointment by calling the Budget & Purchasing Manager at (352) 793-0200. All RFP's/BID's submitted in response to this solicitation become the property of the Board. Unless information submitted is proprietary, copy written, trademarked, or patented, the Board reserves the right to utilize any or all information, ideas, conceptions, or portions of any RFP/BID, in its best interest.

TAXES: The Board of Sumter County Commissioners is exempt from any taxes imposed by the State and/or Federal Government. Exemption certificates will be provided upon request.

NON-COLLUSION DECLARATION: By signing this RFP/BID, all Vendors shall affirm that they shall not collude, conspire, connive or agree, directly or indirectly, with any other Proposer, firm, or person to submit a collusive or sham Proposal in connection with the work for which their RFP/BID has been submitted, or to refrain from Bidding in connection with such work; or have in any manner, directly or indirectly, sought by person to fix the price or prices in the RFP/BID or of any other Bidder, or to fix any overhead, profit, or cost elements of the RFP/BID price or the RFP/BID price of any other Bidder, or to secure through any collusion, conspiracy, connivance, or unlawful agreement any advantage against any other Bidder, or any person interested in the proposed work.

PROPOSER RESPONSIBILITY: Invitation by the Boards to vendors is based on the recipient's specific request and application to DemandStar by Onvia at www.DemandStar.com [(800) 711-1712] or as the result of response by the public to the legal advertisements required by State law. Firms or individuals submit their responses on a voluntary basis, and therefore are not entitled to compensation of any kind.

OWNERSHIP OF SUBMITTALS: All responses, inquiries or correspondence relating to or in reference to this RFP/BID, and all other reports, charts, displays, schedules, exhibits and other documentation submitted by the vendors will become the property of the Board. Reference to literature submitted with a previous RFP/BID will not relieve the Bidder from including any required documents with this RFP/BID.

EXAMINATION OF BID DOCUMENTS: Each Bidder shall carefully examine the RFP/BID Document to ensure all pages have been received, all drawings and/or Specifications and other applicable documents are included, and shall inform himself thoroughly regarding any and all conditions and requirements that may in any manner affect cost, progress or performance of the work to be performed under the Contract. Ignorance on the part of the CONTRACTOR will in no way relieve him of the obligations and responsibilities assumed under the Contract.

VENDOR RESPONSIBILITY: Vendors are fully and completely responsible for the labeling, identification and delivery of their submittals. The Budget & Purchasing Manager will not be responsible for any mislabeled or misdirected submissions, nor those handled by delivery persons, couriers, or the US Postal Service.

DRUG FREE WORKPLACE: All Proposers/Bidders shall submit the enclosed, duly signed and notarized form entitled "Drug Free Workplace Certificate". The Drug Free Workplace Vendor shall have the burden of demonstrating that his program complies with Section 287.087 of the Florida Statutes, and any other applicable state law.

BOARD OF SUMTER COUNTY COMMISSIONERS, are political subdivisions of the State of Florida, and reserve the right to reject any and/or all submittals, reserve the right to waive any informalities or irregularities in the examination process, and reserve the right to award contracts and/or in the best interest of the Boards. Submittals not meeting stated minimum terms and qualifications may be rejected by the Boards as non-responsive. The Boards reserve the right to reject any or all submittals without cause. The Boards reserves the right to reject the submission of any Vendor in arrears or in default upon any debt or contract to the Boards, or who has failed to perform faithfully any previous contract with the Boards or with other governmental agencies.

PUBLIC RECORDS LAW: Correspondence, materials and documents received pursuant to this RFP/BID become public records subject to the provisions of Chapter 119, Florida Statutes.

VERIFICATION OF TIME: Nextel time is hereby established as the Official Time of the Boards.

PREPARATION OF PROPOSALS/BIDS:

Signature of the Bidder: The Bidder must sign the RFP/BID FORMS in the space provided for the signature. If the Proposer/Bidder is an individual, the words "doing business as _____" must appear beneath such signature. In the case of a partnership, the signature of at least one of the partners must follow the firm name and the words, "Member of the Firm" should be written beneath such signature. If the Proposer/Bidder is a corporation, the title of the officer signing the RFP/BID on behalf of the corporation must be stated and evidence of his authority to sign the RFP/BID must be submitted. The Proposer/Bidder shall state in the RFP/BID FORMS the name and address of each person interested therein.

Basis for Bidding: The price proposed for each item shall be on a lump sum or unit price basis according to specifications on the RFP/BID FORM. The proposed prices shall remain unchanged for the duration of the Contract and no claims for cost escalation during the progress of the work will be considered, unless otherwise provided herein.

Total Proposed Price/Total Contract Sum Proposed: If applicable, the total price bid for the work shall be the aggregate of the lump sum prices proposed and/or unit prices multiplied by the appropriate estimated quantities for the individual items and shall be stated in figures in the appropriate place on the RFP/BID FORM. In the event that there is a discrepancy on the RFP/BID FORM due to unit price extensions or additions, the corrected extensions and additions shall be used to determine the project bid amount.

TABULATION: Those wishing to receive an official tabulation of the results of the opening of this RFP/BID are to submit a self-addressed, stamped business size (No. 10) envelope, prominently marked on the front lower left side, with the RFP identification. Tabulation requested by telephone, fax or electronic media will not be accepted.

OBLIGATION OF WINNING BIDDER: The contents of the RFP/BID of the successful proposer/bidder will become contractual obligations if acquisition action ensues. Failure of the successful Proposer/Bidder to accept these obligations in a contract may result in cancellation of the award and such vendor may be removed from future participation.

AWARD OF BID: It is the Boards' intent to select a vendor within **sixty (60) calendar days** of the deadline for receipt of Proposals/Bids. However, Proposals/Bids must be firm and valid for award for at least **ninety (90) calendar days** after the deadline for receipt of the RFP/BID.

ADDITIONAL REQUIREMENTS: The firms shall furnish such additional information as the Boards may reasonably require. This includes information which indicates financial resources as well as ability to provide the services. The Boards reserve the right to make investigations of the qualifications of the firm as it deems appropriate.

PREPARATION COSTS: The Boards shall not be obligated or be liable for any costs incurred by Proposers/Bidders prior to issuance of a contract. All costs to prepare and submit a response to this RFP/BID shall be borne by the Proposer/Bidder.

TIMELINESS: All work will commence upon authorization from the Boards' representative (Budget & Purchasing Manager). All work will proceed in a timely manner without delays. The Contractor shall commence the work UPON RECEIPT OF NOTICE TO PROCEED and/or ORDER PLACED (PURCHASE ORDER PRESENTED), and shall deliver in accordance to the terms and conditions outlined and agreed upon herein.

DELIVERY: All prices shall be FOB Destination, Sumter County, Florida, inside delivery unless otherwise specified.

ADDITIONAL SERVICES/PURCHASES BY OTHER PUBLIC AGENCIES ("PIGGY-BACK"):

The Vendor by submitting a Bid acknowledges that other Public Agencies may seek to "Piggy-Back" under the same terms and conditions, during the effective period of any resulting contract – services and/or purchases being offered in this Bid, for the same prices and/or terms proposed. Vendor has the option to agree or disagree to allow contract Piggy-Back on a case-by-case basis. Before a Public Agency is allowed to Piggy-Back any contract, the Agency must first obtain the vendor's approval – without the vendor's approval, the seeking Agency cannot Piggy-Back.

PLANS, FORMS & SPECIFICATIONS: Bid Packages are available from the Budget & Purchasing Manager. These packages are available for pickup or by mail. If requested to mail, the Proposer/Bidder must supply a courier account number (UPS, FedEx, etc). Proposers/Bidders are required to use the official RFP/BID FORMS, and all attachments itemized herein, are to be submitted as a single document. Any variation from the minimum specifications must be clearly stated on the RFP/BID FORM and/or Exceptions/Deviations Sheet(s). Only one set of plans, forms, and specifications will be furnished each company or corporation interested in submitting a proposal/bid. RFP/BID FORM documents for this project are free of charge and are available on-line and are downloadable (vendor must pay any DemandStar fees or any shipping).

MANUFACTURER'S NAME AND APPROVED EQUIVALENTS: Any manufacturer's names, trade names, brand names, information and/or catalog numbers listed in a specification are for information and not intended to limit competition unless otherwise indicated. The Proposer/Bidder may offer any brand for which he is an authorized representative, which meets or exceeds the RFP/BID specification for any item(s). If RFP's/BID's are based on equivalent products, indicate on the RFP/BID FORM the manufacturer's product name and literature, and/or complete specifications. Reference to literature submitted with a previous RFP/BID will not satisfy this provision. The Proposer/Bidder shall explain in detail the reason(s) why the proposed equivalent will meet the specifications and not be considered an exception thereto. RFP's/BID's which do not comply with these requirements are subject to rejection. RFP's/BID's lacking any written indication of intent to quote an alternate brand will be received and considered in complete compliance with the specifications as listed on the RFP/BID FORM. The Budget & Purchasing Manager is to be notified, in writing, of any proposed changes in materials used, manufacturing process, or construction. However, changes shall not be binding upon the Boards unless evidenced by a Change Notice issued and signed by the Budget & Purchasing Manager, or designated representative.

QUANTITIES: The quantities as specified in this RFP/BID are estimates only and are not to be construed as guaranteed minimums.

SAMPLES: Samples of items, when called for, shall be furnished free of expense, and if not destroyed may, upon request, be returned at the Proposer's/Bidder's expense. Each sample shall be labeled with the Proposer's/Bidder's name, manufacturer brand name and number, RFP/BID number and item reference. Samples of successful Proposer's/Bidder's items may remain on file for the term of the contract. Request for return of samples shall be accompanied by instructions which include shipping authorization and must be received at time of opening. Samples not returned may be disposed of by the Boards within a reasonable time as deemed appropriate.

DOCUMENT RE-CREATION: Vendor may choose to re-create any document(s) required for this solicitation, but must do so at his own risk. All required information in the original Board format must be included in any re-created document. Submittals may be deemed non-responsive if required information is not included in any re-created document.

ACKNOWLEDGED:

 4/26/10
(Signature and Date)

This document must be completed and returned with your Submittal

STATEMENT OF CONTRACTOR'S EXPERIENCE AND PERSONNEL

(Contractor may also provide any supplemental company or personnel information that will assist the Selection Committee in evaluating your proposal).

CONTRACTOR: J. A. Floyd, Inc.

DATE: April 26, 2010

1. How many years has your organization been in business as a general contractor under your present business name? Electrical – 16 Years, HVAC – 6 years, Building Contractor – 3 years

2. List all previous business names of your organization:
N/A

3. How many years experience in general contracting? 16 Years Construction Industry
Prime Contractor 3 Subcontractor 16

4. List all officers and directors of your organization:

NAME	POSITION/TITLE
<u>Floyd Daniel, President</u>	
<u>Curtis Daniel, VP</u>	
<u>Crystal Daniel, SEC/TR</u>	

5. Have you ever failed to complete any work awarded to you in the last 3 years?
Yes _____ No XX. If yes, where and why?

EXPERIENCE

1. Describe any experience of the principal individuals (Foremen, Superintendents, etc.) who are responsible for the actual general contracting work of your organization?

Floyd Daniel	Owner/ Superintendent
Name	Position
All Phases	32 16
Type of Work	Yrs. Experience Yrs. With Firm

Name	Curtis Daniel	Position	Owner/Technical Div.
	All Phases	16	16
Type of Work		Yrs. Experience	Yrs. With Firm

Name		Position
Type of Work		Yrs. Experience
		Yrs. With Firm

Name		Position
Type of Work		Yrs. Experience
		Yrs. With Firm

Name		Position
Type of Work		Yrs. Experience
		Yrs. With Firm

2. List/describe five (5) construction contracts that you currently have or have recently completed.

<u>Holiday Inn Express – 4 story</u>	<u>Crystal River, FL</u>
Project	Location
<u>2008-2009</u>	<u>\$600,000.00</u>
Date	Contract Amount
<u>Project Architect Contact Name and Phone Number</u>	
<u>Owner's Contact Name and Phone Number</u>	

<u>Christian Church in the Wildwood</u>	<u>Weeki Wache Fl</u>
Project	Location
<u>2007 to 2009</u>	<u>\$760,000</u>
Date	Contract Amount
<u>Project Architect Contact Name and Phone Number</u>	
<u>Contact Name and Phone Number</u>	

<u>Sumter County Security Vestibule Building</u>	<u>Bushnell, FL</u>
Project	Location
<u>Dec 2009 to present</u>	<u>\$153,000</u>
Date	Contract Amount
Project Architect Contact Name and Phone Number	
Contact Name and Phone Number	

<u>Brooksville Wesleyan Church</u>	<u>Brooksville, FL</u>
Project	Location
<u>Jan 2010 to Present</u>	<u>\$595,000</u>
Date	Contract Amount
Project Architect Contact Name and Phone Number	
<u>Tom Owens - Public Works Director</u>	
Contact Name and Phone Number	

<u>Social Security Building - Low Voltage Specialties</u>	<u>Lake City, FL</u>
Project	Location
<u>April 2008 to Dec 20</u>	<u>\$20,000</u>
Date	Contract Amount
Project Architect Contact Name and Phone Number	
Contact Name and Phone Number	

CONTRACTOR'S AFFIDAVIT

State of Florida
County of Citrus

Before me personally appeared Floyd C Daniel who is (title) Contractor
of (the company described herein) JA Floyd Inc being duly sworn, deposes and say that the foregoing statements are a true and accurate statement of the position of said organization as of the date thereof, and, that the statements and answers to the foregoing experience questionnaire are correct and true as of the date of this affidavit; and, that he/she understands that intentional inclusion of false, deceptive, or fraudulent statements of this application constitutes fraud; and, agrees to furnish any pertinent information requested by The Sumter County Board of County Commissioner deemed necessary to verify the statements made in this application or regarding the ability, standing and general reputation of the applicant.

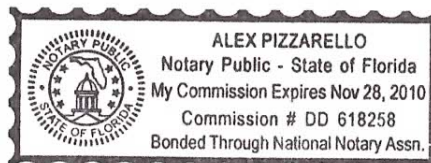
Personally Known _____ or Produced Identification Drivers License

Sworn to and subscribed before me this 26th day of April, 2009 2010

Alex Pizzarello
NOTARY PUBLIC - STATE OF FLORIDA
(Signature of Notary Public)

Alex Pizzarello
(Print Name of Notary Public)

(seal)



DRUG FREE WORKPLACE CERTIFICATE

I, the undersigned, in accordance with Florida Statute 287.087, hereby certify that,

J A Floyd inc
(print or type name of firm)

- Publishes a written statement notifying that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the workplace named above, and specifying actions that will be taken against violations of such prohibition.
- Informs employees about the dangers of drug abuse in the work place, the firm's policy of maintaining a drug free working environment, and available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug use violations.
- Gives each employee engaged in providing commodities or contractual services that are under proposal or bid, a copy of the statement specified above.
- Notifies the employees that as a condition of working on the commodities or contractual services that are under proposal or bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, please or guilty or nolo contendere to, any violation of Chapter 1893, or of any controlled substance law of the State of Florida or the United States, for a violation occurring in the work place, no later than five (5) days after such conviction, and requires employees to sign copies of such written (*) statement to acknowledge their receipt.
- Imposes a sanction on, or requires the satisfactory participation in, a drug abuse assistance or rehabilitation program, if such is available in the employee's community, by any employee who is so convicted.
- Makes a good faith effort to continue to maintain a drug free work place through the implementation of the drug free workplace program.
- "As a person authorized to sign this statement, I certify that the above named business, firm or corporation complies fully with the requirements set forth herein".

Floyd David

Authorized Signature

4-26-2010

Date Signed

State of: Florida

County of: Citrus

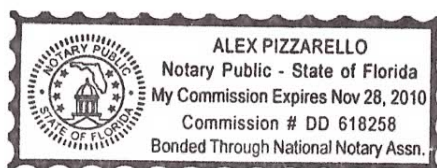
Sworn to and subscribed before me this 26th day of April, 2010

Personally known _____ or Produced Identification Drivers License
(Specify Type of Identification)

Alex Pizzarello
Signature of Notary

My Commission Expires 11/28/2010

(seal)



STATEMENT OF CONTRACTOR'S EXPERIENCE AND PERSONNEL

(Contractor may also provide any supplemental company or personnel information that will assist the Selection Committee in evaluating your proposal).

CONTRACTOR: SiteSecure, Inc.

DATE: April 27, 2010

1. How many years has your organization been in business as a general contractor under your present business name?

6

2. List all previous business names of your organization:

N/A

3. How many years experience in general contracting? 6

Prime Contractor _____ Subcontractor _____

4. List all officers and directors of your organization:

NAME	POSITION/TITLE
<u>Ron Davoli, President</u>	
<u>Bill Robinson, CFO</u>	
<u>Randy Pinkham, VP Operations</u>	
<u>Andrew Bowman, VP Engineering</u>	

5. Have you ever failed to complete any work awarded to you in the last 3 years?

Yes _____ No XX _____. If yes, where and why?

EXPERIENCE

1. Describe any experience of the principal individuals (Foremen, Superintendents, etc.) who are responsible for the actual general contracting work of your organization?

<u>Willis Lint</u>	<u>Project Superintendent</u>
Name	Position
<u>Installation Management</u>	<u>6</u>
Type of Work	Yrs. With Firm
<u>14</u>	<u>6</u>
Yrs. Experience	

Name	Mark Day	Position	Project Manager
	Engineering, Project Management		9
Type of Work		Yrs. Experience	Yrs. With Firm

Name	Andy Bowman	Position	VP Engineering
	Programming		14
Type of Work		Yrs. Experience	Yrs. With Firm

Name	John Grocke	Position	CAD Engineer
	Design/Drafting		20
Type of Work		Yrs. Experience	Yrs. With Firm

Name		Position	
Type of Work		Yrs. Experience	Yrs. With Firm

2. List/describe five (5) construction contracts that you currently have or have recently completed.

<u>Marion County Justice Center</u>		<u>Ocala, FL</u>
Project		Location
<u>Current</u>	<u>\$600,000.00</u>	
Date		Contract Amount
Project Architect Contact Name and Phone Number		
Owner's Contact Name and Phone Number		

<u>Sanford Airport</u>		<u>Sanford FL</u>
Project		Location
<u>02/04 to Present</u>	<u>\$1.8mil</u>	
Date		Contract Amount
Project Architect Contact Name and Phone Number		
Bryant Garrett, Director of Security -		
Contact Name and Phone Number		

<u>Seminole County Network Access Control</u>	<u>Sanford, FL</u>
Project	Location
<u>9/2003 to present</u>	<u>\$1.9 mil</u>
Date	Contract Amount
Project Architect Contact Name and Phone Number	
<u>Tom Owens – Public Works Director - 407-665-2721</u>	
Contact Name and Phone Number	

<u>Yankee Lake WWTP Security</u>	<u>Seminole Cty, FL</u>
Project	Location
	<u>\$375k</u>
Date	Contract Amount
Project Architect Contact Name and Phone Number	
<u>Tom Owens – Public Works Director 407-665-2721</u>	
Contact Name and Phone Number	

<u>GOAA Security upgrades</u>	<u>Orlando, FL</u>
Project	Location
	<u>\$2.1 mil</u>
Date	Contract Amount
Project Architect Contact Name and Phone Number	
<u>Greg Watson – MIS Manager – 407-825-3511</u>	
Contact Name and Phone Number	

CONTRACTOR'S AFFIDAVIT

State of Florida

County of Seminole

Before me personally appeared Randy Pinkham who is (title) Vice President of (the company described herein) SiteSecure, Inc. being duly sworn, deposes and say that the foregoing statements are a true and accurate statement of the position of said organization as of the date thereof, and, that the statements and answers to the foregoing experience questionnaire are correct and true as of the date of this affidavit; and, that he/she understands that intentional inclusion of false, deceptive, or fraudulent statements of this application constitutes fraud; and, agrees to furnish any pertinent information requested by The Sumter County Board of County Commissioner deemed necessary to verify the statements made in this application or regarding the ability, standing and general reputation of the applicant.

Personally Known X or Produced Identification _____Sworn to and subscribed before me this 26 day of April, 2009 2010Lisa M. DaggettNOTARY PUBLIC - STATE OF FLORIDA
(Signature of Notary Public)Lisa M. Daggett

(Print Name of Notary Public)

LISA M. DAGGETT
Notary Public, State of Florida
My comm. exp. Apr. 5, 2011
Comm. No. DD 659881

(seal)

DRUG FREE WORKPLACE CERTIFICATE

I, the undersigned, in accordance with Florida Statute 287.087, hereby certify that,

SECURITY, INC.
(print or type name of firm)

- Publishes a written statement notifying that the unlawful manufacture, distribution, dispensing, possession or use of a controlled substance is prohibited in the workplace named above, and specifying actions that will be taken against violations of such prohibition.
- Informs employees about the dangers of drug abuse in the work place, the firm's policy of maintaining a drug free working environment, and available drug counseling, rehabilitation, and employee assistance programs, and the penalties that may be imposed upon employees for drug use violations.
- Gives each employee engaged in providing commodities or contractual services that are under proposal or bid, a copy of the statement specified above.
- Notifies the employees that as a condition of working on the commodities or contractual services that are under proposal or bid, the employee will abide by the terms of the statement and will notify the employer of any conviction of, plea or guilty or nolo contendere to, any violation of Chapter 1893, or of any controlled substance law of the State of Florida or the United States, for a violation occurring in the work place, no later than five (5) days after such conviction, and requires employees to sign copies of such written (*) statement to acknowledge their receipt.
- Imposes a sanction on, or requires the satisfactory participation in, a drug abuse assistance or rehabilitation program, if such is available in the employee's community, by any employee who is so convicted.
- Makes a good faith effort to continue to maintain a drug free work place through the implementation of the drug free workplace program.
- "As a person authorized to sign this statement, I certify that the above named business, firm or corporation complies fully with the requirements set forth herein".

[Signature]
Authorized Signature

4/21/10
Date Signed

State of: Florida

County of: Seminole

Sworn to and subscribed before me this 21 day of April, 2010

Personally known X or Produced Identification _____
(Specify Type of Identification)

[Signature]
Signature of Notary

My Commission Expires 4.5.11

(seal) **LISA M. DAGGETT**
Notary Public, State of Florida
My comm. exp. Apr. 5, 2011
Comm. No. DD 659881

This document must be completed and returned with your Submittal
DISCLOSURE OF SUBCONTRACTORS, SUBCONSULTANTS AND SUPPLIERS

SUBCONTRACTOR LICENSE INFORMATION MUST BE SUBMITTED WITH THE RFP, IN ORDER FOR SUMTER COUNTY TO VERIFY THAT THE SUBCONTRACTOR ARE IN FACT LICENSE PERFORM THEIR TRADE SCOPE OF WORK.

Name of Firm Submitting Proposal:

J. A. Floyd, Inc.

(Print or Type)

Name of Person Submitting Proposal:

Floyd Daniel

(Print or Type)

Please list **all Subcontractors**, or Material \ Equipment Suppliers to be used in connection with performance of this contract. Attach additional sheets as necessary.

Name of Firm or Agency: SiteSecure, Inc.

Address: 627 Progress Way, Sanford, FL 32771

Telephone: 407-328-5220

Contractor's License number CGC1506448 / EF0000718 / PE 00009710

Contact Name / Title: Mark Day, Account Manager

Name of Firm or Agency: Axis communications

Address:

Telephone:

Contractor's License number

Contact Name / Title:

Name of Firm or Agency: Bosch Security

Address:

Telephone:

Contractor's License number

Contact Name / Title:

Name of Firm or Agency: Dell Computers

Address:

Telephone:

Contractor's License number

Contact Name / Title:

Name of Firm or Agency: Hewlett Packard

Address:

Telephone: _____

Contractor's License number _____

Contact Name / Title: _____

Name of Firm or Agency: Genetec Innovative Solutions

Address: _____

Telephone: _____

Contractor's License number _____

Contact Name / Title: _____

Name of Firm or Agency: ADI, Inc. – Clearwater Branch

Address: _____

Telephone: _____

Contractor's License number _____

Contact Name / Title: _____

Name of Firm or Agency: HD Supply – Ocala Branch

Address: _____

Telephone: _____

Contractor's License number _____

Contact Name / Title: _____

This document must be completed and returned with your Submittal

**STATEMENT OF "NO PROPOSAL"
RFP # 154-0-2010**

NA

If you do not intend to submit a proposal for this project, please complete and return this form prior to date shown for receipt of proposals to: Sumter County BOCC, 910 North Main Street, Bushnell, Florida, 33513. Attn: Mrs. Amanda Taylor.

We, the undersigned, have declined to submit a proposal for your **RFP # 154-0-2010/AT Division 17 Security Vestibule Re-Bid** for the following reasons:

- ☐ Specifications are too "tight", i.e. geared toward one brand or manufacturer only (please explain reason below)
- ☐ Insufficient time to respond to Request for Proposals.
- ☐ We do not offer this product/s or equivalent.
- ☐ Remove us from your vendor's list for this commodity or service.
- ☐ Our product schedule would not permit us to perform to specifications.
- ☐ Unable to meet specifications.
- ☐ Unable to meet insurance requirements.
- ☐ Specifications unclear (please explain below).
- ☐ Competition restricted by pre-approved owner standards.
- ☐ Other (please specify below or attach a separate sheet).

Remarks:

"We understand that if this "No Proposal" letter is not executed and returned, our name may be deleted from the list of qualified proposers for the owner for future projects or commodities."

Company Name: _____

Address: _____

Signature and Title: _____

Telephone Number _____ Date _____

PART 5 SCOPE OF SERVICES

The Sumter County Board of County Commissioners is requesting proposals from qualified firms for the renovation of the **RFP # 154-0-2010/AT Division 17 Security Vestibule Re-Bid**.

The Sumter County Board of County Commissioners will assign a single contract to Greg Construction for this project, and Greg Construction will award a contract to the successful proposer for Division 17 Security Vestibule Re-Bid. The successful proposer will be required to execute contract and submit a separate cost estimate (form 311). However, for purposes of this RFP, only one Contractor will be selected to complete the entire RFP project. The Selection Committee will be responsible for considering all criteria when evaluating submittals.

PLANS / SPECIFICATIONS

Construction documents will be available for purchase at NGI – Ocala, 304A SW Broadway Street, Ocala, FL 34471, Phone (352) 622-5039, Email contact – Ocala@ngiusa.com Fax Contact (352) 622-5066. All requests for documents must be made by email or fax and must provide appropriate payment information by credit card or current NGI account. Only full sets of documents will be sold, no partial sets will be sold. Plans will also be available on www.demandstar.com along with the bid package.

CONSTRUCTION SCHEDULE

The construction period shall be as indicated by project, by calendar days from Notice to Proceed to substantial completion for issuance of Building Certificate of Occupancy. Weather delays will be given where such delays exceed published national weather service norms for the same period, per the terms of the contract documents. Division 17 Security Vestibule Re-Bid – will comply with Greg Construction's schedule. See attached schedule from Greg Construction.

EXISTING FACILITIES

This project is being constructed next to the Judicial Building and the Historical Courthouse. The Contractor shall take all necessary measures to ensure that the **day to day operations are not adversely impacted as determined by Sumter County**.

SITE CLEANLINESS AND CONDITION

As much as possible, all areas shall be kept free of litter and/or construction debris. It is expected that the contractor and workers are to be aware of site conditions and keep a neat and clean appearance at all times.

PERMITS / LICENSES

Building permits **ARE** required for this project. Obtaining the necessary permits and payment of related state fees will be the responsibility of the CONTRACTOR. All county fees will be waived, although the state fees collected by the Sumter County Building Department will be paid by the Contractor, and should be included in the proposal. Contractor must meet all local codes and licensing requirements. Sumter County is the local authority and jurisdiction of this project. The Contractor and all Sub-Contractors must be licensed and registered as applicable in Sumter County to perform the work required for this project. The Contractor shall furnish the County with a list of all sub-contractors performing work on the project. **Upon submission of the RFP package**, the successful vendor will be required to obtain any additional license as required by the State of Florida or Sumter County. It will be the vendor's responsibility to determine which type of additional licensing or permitting is required.

**PART 6
EXHIBITS
Drawing & Specification
Exhibit A1
Division 17 Security Vestibule Re-Bid**

PROJECT MANUAL SPECIFICATIONS DATED, JANUARY 25, 2010

DIVISION 0 - BIDDING AND CONTRACT REQUIREMENTS

00001 COVER PAGE
00002 PROJECT DIRECTORY
00005 TABLE OF CONTENTS

SPECIFICATIONS

DIVISION 1 - GENERAL REQUIREMENTS

01010 SUMMARY OF WORK
01040 PROJECT COORDINATION
01045 CUTTING AND PATCHING
01201 PRECONSTRUCTION CONFERENCE
01340 SUBMITTALS AND SUBSTITUTIONS
01370 SCHEDULE OF VALUES
01400 QUALITY CONTROL
01421 REFERENCE STANDARDS AND DEFINITIONS
01640 PRODUCT HANDLING
01700 CONTRACT CLOSEOUT
01710 FINAL CLEANING
01720 PROJECT RECORD DOCUMENTS
01730 OPERATIONS AND MAINTENANCE DATA
01740 WARRANTIES

DIVISION 2 - SITE WORK
(NOT USED)

DIVISION 3 - CONCRETE
(NOT USED)

DIVISION 4 - MASONRY
(NOT USED)

DIVISION 5 - METALS
(NOT USED)

DIVISION 6 - WOOD AND PLASTICS
(NOT USED)

DIVISION 7 - THERMAL AND MOISTURE PROTECTION

07270 FIRE STOPPING

07920 SEALANTS AND CAULKING

DIVISION 8 - DOORS AND WINDOWS

08710 FINISHED HARDWARE (SEE DRAWINGS SHEET A601)

DIVISION 9 - FINISHES

(NOT USED)

DIVISION 10 - SPECIALTIES

(NOT USED)

DIVISION 11 - EQUIPMENT

(NOT USED)

DIVISION 12 - FURNISHINGS

(NOT USED)

DIVISION 13 - SPECIAL CONSTRUCTION

(NOT USED)

DIVISION 14 - CONVEYING SYSTEMS

(NOT USED)

DIVISION 15 - MECHANICAL (FOR REFERENCE AND COORDINATION)

- 15058 COMMON MOTOR REQUIREMENTS FOR HVAC EQUIPMENT
- 15061 HANGERS AND SUPPORTS FOR PLUMBING PIPING AND EQUIPMENT
- 15062 HANGERS AND SUPPORTS FOR HVAC PIPING AND EQUIPMENT
- 15076 IDENTIFICATION FOR PLUMBING PIPING AND EQUIPMENT
- 15077 IDENTIFICATION FOR HVAC PIPING AND EQUIPMENT
- 15082 PLUMBING INSULATION
- 15083 HVAC INSULATION
- 15096 ESCUTCHEONS FOR FIRE-SUPPRESSION PIPING
- 15097 ESCUTCHEONS FOR PLUMBING PIPING
- 15111 GENERAL-DUTY VALVES FOR PLUMBING PIPING
- 15140 DOMESTIC WATER PIPING
- 15145 DOMESTIC WATER PIPING SPECIALTIES
- 15150 SANITARY WASTE AND VENT PIPING
- 15155 SANITARY WASTE PIPING SPECIALTIES
- 15160 STORM DRAINAGE PIPING
- 15165 STORM DRAINAGE PIPING SPECIALTIES
- 15183 REFRIGERANT PIPING
- 15410 PLUMBING FIXTURES
- 15415 DRINKING FOUNTAINS AND WATER COOLERS
- 15485 ELECTRIC WATER HEATERS
- 15732 PACKAGED, OUTDOOR, CENTRAL-STATION AIR-HANDLING UNITS
- 15738 SPLIT-SYSTEM AIR-CONDITIONING UNITS
- 15815 METAL DUCTS

- 15820 DUCT ACCESSORIES
- 15837 CENTRIFUGAL FANS
- 15855 DIFFUSERS, REGISTERS, AND GRILLES
- 15950 TESTING, ADJUSTING, AND BALANCING

DIVISION 16 - ELECTRICAL (FOR REFERENCE AND COORDINATION)

- 16010 BASIC ELECTRICAL REQUIREMENTS
- 16051 COMMON WORK RESULTS FOR ELECTRICAL
- 16052 COMMON WORK RESULTS FOR COMMUNICATIONS
- 16053 COMMON WORK RESULTS FOR ELECTRONIC SAFETY AND SECURITY
- 16055 OVERCURRENT PROTECTIVE DEVICE COORDINATION
- 16060 GROUNDING AND BONDING
- 16073 HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS
- 16075 ELECTRICAL IDENTIFICATION
- 16120 CONDUCTORS AND CABLES
- 16130 RACEWAYS AND BOXES
- 16140 WIRING DEVICES
- 16289 TRANSIENT VOLTAGE SUPPRESSION
- 16410 ENCLOSED SWITCHES AND CIRCUIT BREAKERS
- 16420 ENCLOSED CONTROLLERS
- 16442 PANELBOARDS
- 16461 LOW VOLTAGE TRANSFORMERS
- 16491 FUSES
- 16511 INTERIOR LIGHTING
- 16670 LIGHTNING PROTECTION
- 16721 ADDRESSABLE FIRE ALARM SYSTEM

DIVISION 17 - COMMUNICATIONS AND TECHNOLOGY (REBID)

- 17010 TECHNOLOGY GENERAL PROVISIONS
- 17110 PATHWAYS AND SPACES FOR STRUCTURED CABLING SYSTEM
- 17120 STRUCTURED CABLING SYSTEM
- 17450 BONDING FOR TELECOMMUNICATIONS SYSTEMS
- 17810 SECURITY CONTROL SYSTEMS
- 17820 CLOSED CIRCUIT TELEVISION SYSTEMS

**PART 6
EXHIBITS
Exhibit A
Proposal Form**

To: Bradley Arnold, County Administrator
910 N. Main Street, Bushnell, FL 33513
Telephone: (352) 793-0200
Fax: (352) 793-0207

Re: **RFP # 154-0-2010/AT Division 17 Security Vestibule Re-Bid**

Dear Mr. Arnold:

1. Having carefully examined all the drawings and specifications prepared by Architecture Studio for each of the projects listed above:
And being familiar with the premises affecting the work, the undersigned proposes and hereby agrees to furnish all labor and material and to perform all work in accordance with said documents for the Lump Sum Amount of:

Two Hundred Eighty Three Thousand One Hundred Thirteen Dollars and 26/100 cent
(\$_283,113.26_____)
2. The construction period shall be agree to as indicated by project, by calendar days, from Notice to Proceed to substantial completion for issuance of Building Certificate of Occupancy. Weather delays will be given where such delays exceed published national weather service norms for the same period, per the terms of the contract documents.
 - A) Sumter County Division 17 Security Vestibule Re-Bid – in accordance with Greg Constructions schedule
3. In submitting this Proposal, it is understood that the right is reserved by the Board of Sumter County Commissioners to reject any and all proposals.
4. The Contractor hereby acknowledges the receipt of Addenda No. _____ issued during the proposal period and certifies their inclusion in the proposal. (Indicate "NONE" if no addendums were received).
5. The Undersigned agrees that this proposal will hold good for sixty (60) days from due date.
6. All request for information (RFI's) will be sent to Mrs. Amanda Taylor for response.

Date: April 26, 2010

J. A. Floyd, Inc.


Contractor

By: Floyd Daniel

Title: President

Telephone: 352-563-2962

Address: 2148 N Crede Ave.
Crystal River, FL 34428

SUMTER COUNTY BOCC
 PROJECT - Security Vestibule Division 17 Rebid
 EXHIBIT B - FORM 311
 PREPARED BY

DIV #	ACCOUNT DESCRIPTION	QTY	UNIT	BID
			RATE	AMOUNT
1000	GENERAL CONDITIONS			Included
1040	PROJECT COORDINATION			Included
1045	CUTTING AND PATCHING, No Painting Included.			\$1500 Allowance
1310	PERMITS – STATE			Included
1311	BONDS			By Greg Const.
1312	INSURANCE			Included
1313	OVERHEAD AND PROFIT			\$7,800.00
1500	TEMPORARY FACILITIES AND CONTROLS			By Greg Const.
1700	CONTRACT CLOSEOUT			Included
1710	FINAL CLEANING			Included
1740	WARRANTIES			Included
	PATHWAYS AND SPACES FOR STRUCTURED			\$7,916.00
17110	CABLING SYSTEMS			
17120	STRUCTURED CABLING SYSTEM			\$19,302.00
	BONDING FOR TELECOMMUNICATIONS			\$1,500.00
17450	SYSTEMS			
17810	SECURITY CONTROL SYSTEMS			\$84,221.95
17820	CLOSED CIRCUIT TELEVISION SYSTEMS			\$160,873.31
	SUB -TOTAL PROJECT COST			\$283,113.26
	CONTINGENCY @ %		0.00%	
	TOTAL BID AMOUNT			\$283,113.26
	Optional Deducts, Not Included, See Below			
	Deduct – Field Tech Training instead of Manufacturer Training			\$ (6,000.00)
	Deduct – Use low voltage power to cameras in lieu of 120V Power			\$ (3,500.00)

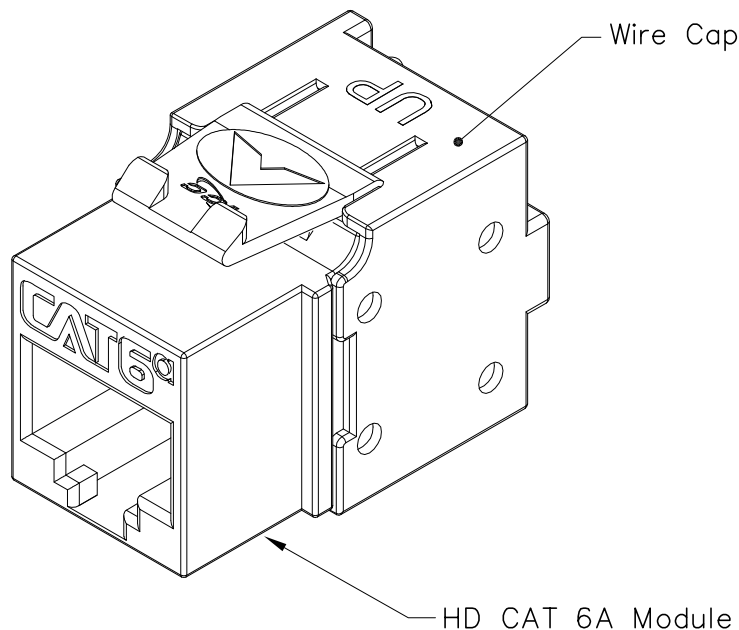
Note: SiteSecure has RCDD Consultant that will review project plans. RCDD professionals are not usually staff members as spec's talk about.

8P8C High Density Category 6A Module

PRODUCT SPECIFICATION

Package includes:

- A. 8P8C HD Category 6A Module, 1 pc
- B. Shielded Wire Cap, 1 pc



Features and Benefits:

- CAT 6A rated connectors provide excellent performance for data networks requiring maximum speed and bandwidth
- PCB technology provides maximum performance and superior signal quality
- Enhanced crosstalk cancellation reduces return loss and improves performance by rejecting noise and unwanted signals
- Engineered to provide 110 IDC termination reducing installation time
- Used with ICC 110 punch down tool ICACSPDT00
- Includes an integrated TIA-568A/B color wiring diagram
- Reduced rear footprint allows for greater connectivity density and provides for more port configurations in a smaller area
- Compatible with ICC CAT6A blank patch panels, ICMPP0246A

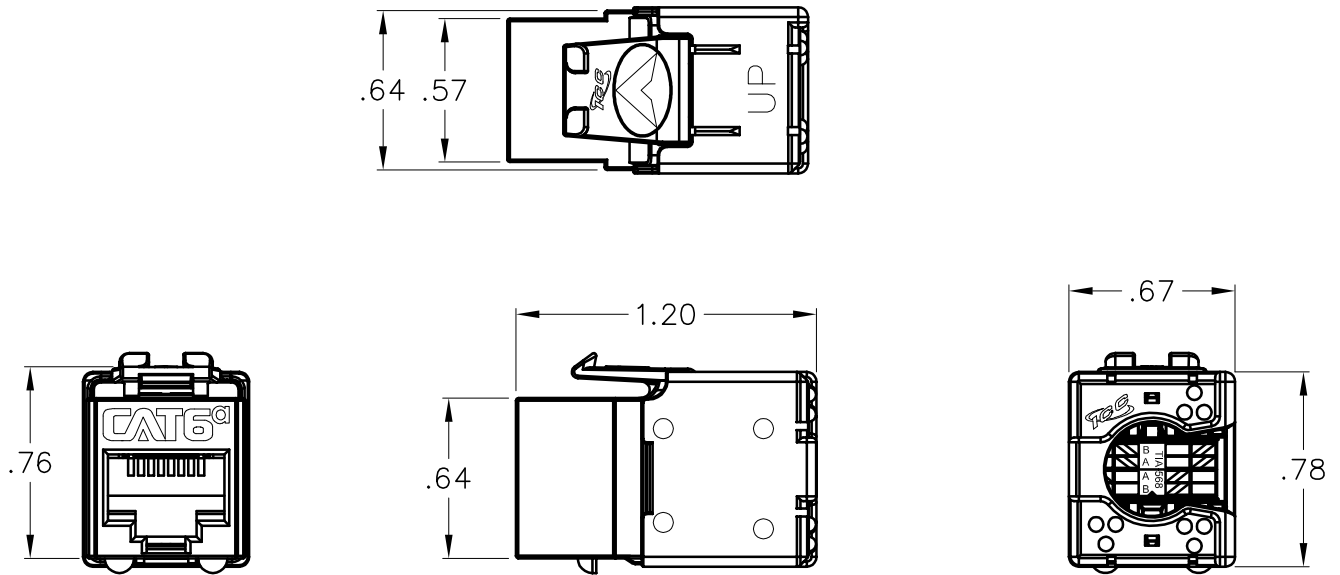
MODULE, CAT 6A, HD

ITEM NO.	IC1078GAXX
DWG NO.	PS1078GA00

REV.	C
PAGE NO.	1



CUSTOMER CARE / TECHNICAL SUPPORT * CSR@ICC.COM / 888-ASK-4-ICC (275-4422) * 16800 Edwards Road, Cerritos, CA 90703 * Phone 562-356-3111 * Fax 562-356-3100 * www.icc.com



NOTE: UNLESS OTHERWISE SPECIFIED

1. CERTIFICATION:

A. MEETS TIA/EIA-568-B.2-10 CAT.6A

2. ENVIRONMENTAL CONDITION:

A. STORAGE: -40 TO +70° C

B. OPERATION: -10 TO +60° C

3. ELECTRICAL:

A. ELECTRICAL INSULATION RESISTANCE: 500 MΩ MIN @ 100V DC

B. DIELECTRIC WITHSTANDING VOLTAGE: 1000V DC OR AC PEAK CONTACT TO CONTACT @ 60Hz FOR 1 MINUTE

C. SPRING WIRE CONTACT RESISTANCE: 20 MΩ MAX.

D. IDC CONTACT RESISTANCE: 2.5 MΩ MAX.

4. MECHANICAL:

A. RETENTION: 50N (11 LBF) FOR 60s +/-5s

B. INSERTION/EXTRACTION LIFE: 750 CYCLES MIN.

5. CAT 6A MODULE:

A. MATERIAL:

-HOUSING: HIGH-IMPACT, FLAME RETARDANT PLASTIC, UL 94V-0

-IDC HOUSING: HIGH-IMPACT, FLAME RETARDANT PLASTIC, UL 94V-0

-IDC CONTACT: PHOSPHOR BRONZE ALLOY WITH 100μ, 100% SN ALLOY

-WIRE GAUGE: 23~24 AWG SOLID WIRE

-SPRING WIRE: PHOSPHOR BRONZE ALLOY PLATED WITH 50μ GOLD OVER 70~100μ NICKEL

B. COLORS: XX = BL-BLUE & WH-WHITE

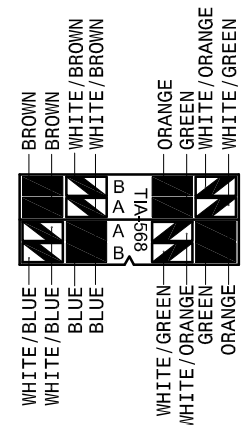
6. SHIELDED WIRE CAP:

A. MATERIAL: HIGH-IMPACT, FLAME RETARDANT PLASTIC, UL 94V-0

B. COLOR: BLACK

CATEGORY 6A CONNECTING HARDWARE REQUIREMENTS																
FREQUENCY (MHz)	1.0	4.0	8.0	10.0	16.0	20.0	25.0	31.25	62.5	100	200	250	300	400	500	
NEXT LOSS (db)	75.0	75.0	75.0	74.0	69.0	68.0	66.0	64.1	58.1	54.0	48.0	46.0	42.9	37.9	34.0	
FEXT LOSS (db)	75.0	71.1	65.0	63.1	59.0	57.1	55.1	53.2	47.2	43.1	37.1	35.1	33.6	31.1	29.1	
RETURN LOSS (db)	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	28.0	22.0	20.0	18.5	16.0	14.0	
INSERTION LOSS(db)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.11	0.16	0.20	0.28	0.32	0.35	0.40	0.45	

WIRING DIAGRAM



UL US FILE NO. XXXXXX

MODULE, CAT 6A, HD

ITEM NO.	IC1078GAXX	REV.	C
DWG NO.	PS1078GA00	PAGE NO.	2



CUSTOMER CARE / TECHNICAL SUPPORT * CSR@ICC.COM / 888-ASK-4-ICC (275-4422) * 16800 Edwards Road, Cerritos, CA 90703 * Phone 562-356-3111 * Fax 562-356-3100 * www.icc.com



GENESIS SERIES CABLE

General Communications Cable Part No. 5092

Description:

4 pair Category 6 unshielded twisted pair (UTP) cable, riser communication (CMR) rated by UL. AWG #23 solid bare copper conductors, polypropylene insulation, FR polyolefin spacer, PVC jacket with ripcord under jacket and sequential footage markings. ETL Verified to TIA/EIA-568-B.2-1 requirements.

Physical Information:

UL Rating:	CMR	Conductor Color Code	Pair
Cable Weight:	25 lbs/1000'	Blue & White/Blue	1
Jacket Diameter:	0.240"	Orange & White/Orange	2
Min. Bend Radius:	1.0"	Green & White/Green	3
Max. Pulling Tension:	25 lbs.	Brown & White/Brown	4

Print Legend: HONEYWELL CATLINK 6 PLUS P/N 5092 4PR23 (ETL) CMR/CL2R SUNRES (RoHS) 3038058 ETL VERIFIED
CAT 6 C(ETL) FT4 W/O# XXXXXX-XXX XXXX FT PORT/ROOM A B C D E F 1 2 3 4 5 6 7 8 9

Electrical Information

Voltage Rating: 300 V

Current Rating: 1.4 A

Attribute	Nominal Value	Maximum Value
DC Resistance	7.6 ohms/100m	9.38 ohms/100m
Resistance Unbalance	1.5%	5%
Capacitance	4.9 nF/100m	5.6 nF/100m
Capacitance Unbalance	50 pF/100m	330 pF/100m
Velocity of Propagation	69%	NA
Propagation Delay	535 ns/100m	570 ns/100m
Delay Skew	20 ns/100m	45 ns/100m

Frequency (MHz)	Max Attenuation (dB/100m)	Min NEXT (dB)	Min PSNEXT (dB)	Min PSACR (dB/100m)	Impedance (ohms)	Min PSELFEXT (dB)	RL (dB)
0.772	1.8	76	74	72	NA	67	NA
1	2.0	74	72	70	100 +/- 15	65	20
4	3.8	65	63	66	100 +/- 15	53	23
8	5.3	61	59	53	100 +/- 15	47	25
10	6.0	59	57	51	100 +/- 15	45	25
16	7.6	56	54	47	100 +/- 15	41	25
20	8.5	55	53	44	100 +/- 15	39	25
25	9.5	53	51	42	100 +/- 15	37	24
31.25	10.7	52	50	39	100 +/- 15	35	24
62.5	15.4	47	45	30	100 +/- 15	29	22
100	19.8	44	42	23	100 +/- 15	25	20
155	25.2	41	39	14	100 +/- 15	21	19
200	29.0	40	38	8.6	100 +/- 15	19	18
250	32.8	38	36	3.5	100 +/- 15	17	17
350	39.8	36	34	---	100 +/- 15	14	16
500	48.9	34	32	---	100 +/- 15	11	15



GENESIS SERIES CABLE

General Communications Cable Part No. 5102

Description:

4 pair Category 6 unshielded twisted pair (UTP) cable, plenum communication (CMP) rated by UL. AWG #23 solid bare copper conductors, FEP insulation, fluoropolymer spacer, LSPVC jacket with ripcord under jacket and sequential footage markings. ETL Verified to TIA/EIA-568-B.2-1 requirements.

Physical Information:

UL Rating:	CMP	Conductor Color Code	Pair
Cable Weight:	28 lbs/1000'	Blue & White/Blue	1
Jacket Diameter:	0.240"	Orange & White/Orange	2
Min. Bend Radius:	1.0"	Green & White/Green	3
Max. Pulling Tension:	25 lbs.	Brown & White/Brown	4

Print Legend: HONEYWELL CATLINK 6 PLUS P/N 5102 4PR23 (ETL) CMP/CL2P 3038058 ETL VERIFIED
CAT 6 C(ETL) (RoHS) W/O# XXXXXX-XXX XXXX FT PORT/ROOM A B C D E F 1 2 3 4 5 6 7 8 9

Electrical Information: Voltage Rating: 300 V Current Rating: 1.4 A

<i>Attribute</i>	<i>Nominal Value</i>	<i>Maximum Value</i>
Dc Resistance	7.6 ohms/100m	9.38 ohms/100m
Resistance Unbalance	1.5%	5%
Capacitance	4.9 nF/100m	5.6 nF/100m
Capacitance Unbalance	50 pF/100m	330 pF/100m
Velocity of Propagation	70%	NA
Propagation Delay	515 ns/100m	570 ns/100m
Delay Skew	17 ns/100m	45 ns/100m

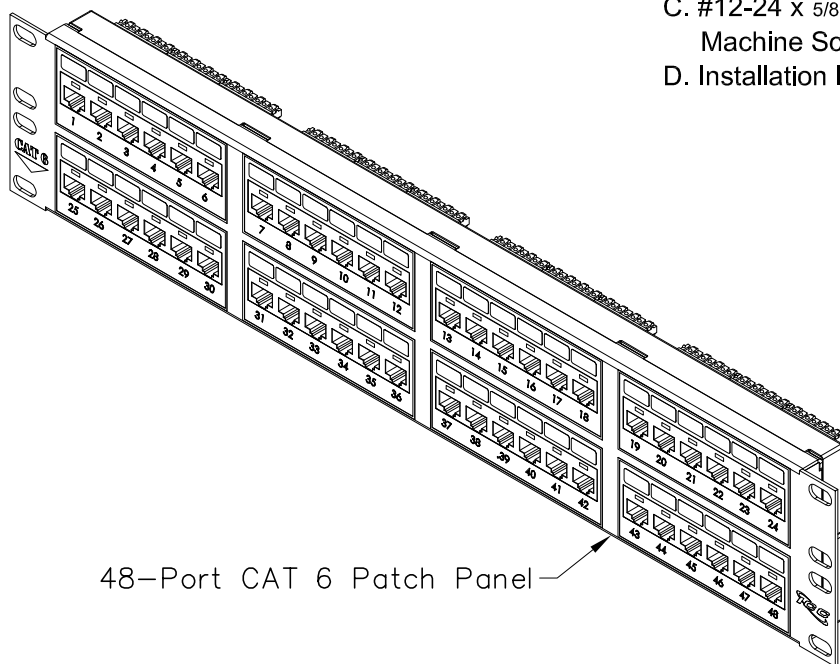
Frequency (MHz)	Max Attenuation (dB/100m)	Min NEXT (dB)	Min PSNEXT (dB)	Min PSACR (dB/100m)	Impedance (ohms)	Min PSELFEXT (dB)	RL (dB)
0.772	1.8	76	74	72	NA	67	NA
1	2.0	74	72	70	100 +/- 15	65	20
4	3.8	65	63	66	100 +/- 15	53	23
8	5.3	61	59	53	100 +/- 15	47	25
10	6.0	59	57	51	100 +/- 15	45	25
16	7.6	56	54	47	100 +/- 15	41	25
20	8.5	55	53	44	100 +/- 15	39	25
25	9.5	53	51	42	100 +/- 15	37	24
31.25	10.7	52	50	39	100 +/- 15	35	24
62.5	15.4	47	45	30	100 +/- 15	29	22
100	19.8	44	42	22	100 +/- 15	25	20
155	25.2	41	39	14	100 +/- 15	21	19
200	29.0	40	38	8.6	100 +/- 15	19	18
250	32.8	38	36	3.5	100 +/- 15	17	17
350	39.8	36	34	---	100 +/- 15	14	16
500	48.9	34	32	---	100 +/- 15	11	15

48-Port Category 6 Patch Panel

PRODUCT SPECIFICATION

Package includes:

- A. 48-Port CAT 6 Patch Panel, 1 pc
- B. 6" Cable Tie, 10 pcs
- C. #12-24 x 5/8" Pan Head, Pilot Point Machine Screw, 4 pcs
- D. Installation Instructions, 1 sheet



48-Port CAT 6 Patch Panel

Features and Benefits:

- Rack mounted CAT 6 component rated patch panel provides excellent performance for data networks requiring maximum speed and bandwidth.
- Enhanced crosstalk cancellation reduces return loss and improves performance by rejecting noise and unwanted signals.
- Exceeds ANSI/TIA/EIA-568-B.2-1 Category 6 connecting hardware requirements.
- Engineered to provide 110 IDC termination reducing installation time.
- Includes an integrated TIA-568A/B color wiring diagram.
- Backwards compatible to all lower rated category components.
- Designed to fit all standard 19" racks and cabinets.
- 2 rack mount space (RMS).
- Used with ICPCS6 CAT 6 patch cords and ICACSPDT00 110 punch down tool.
- Installation instructions.
- UL listed.

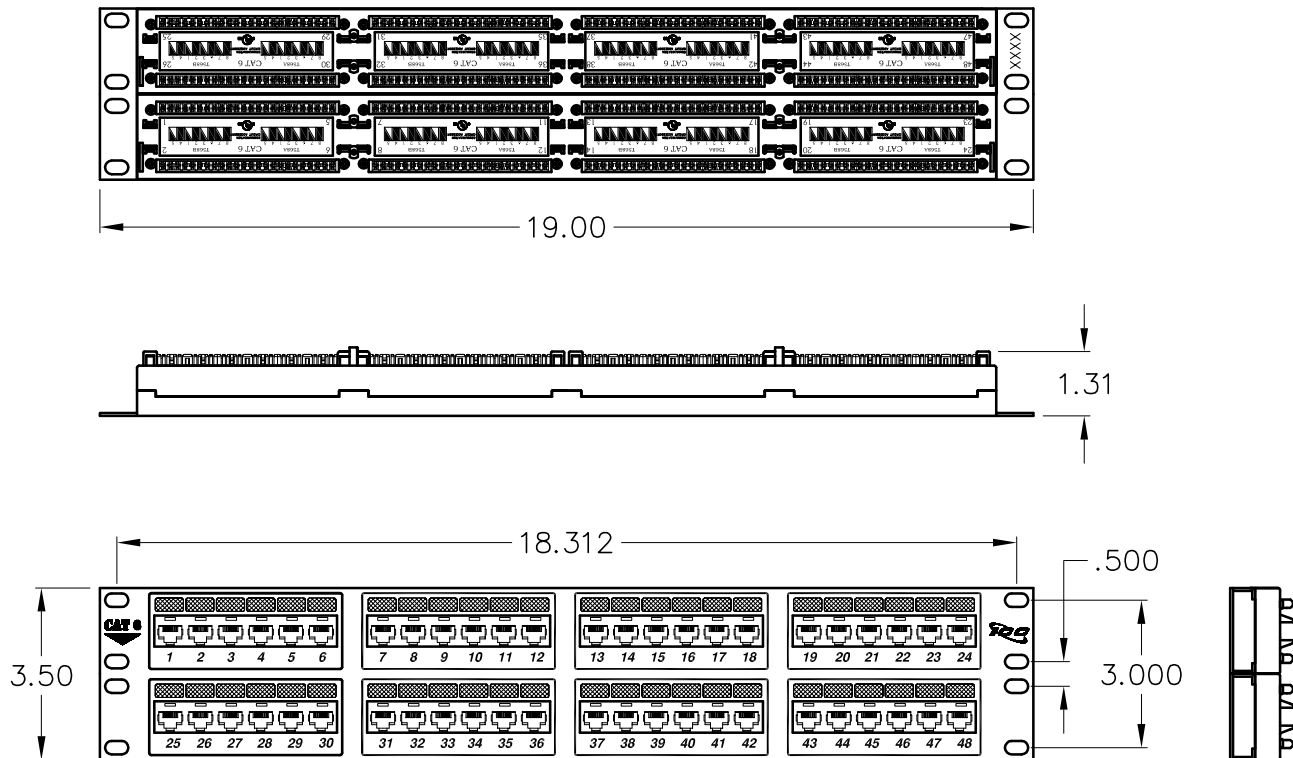
PATCH PANEL, CAT 6, 48-PORT, 2 RMS

ITEM NO.	ICMPP04860
DWG NO.	PSMPP04860

REV.	C
PAGE NO.	1



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NOTE: UNLESS OTHERWISE SPECIFIED

1. 48-PORT CAT 6 PATCH PANEL:

A. MATERIAL:

- 48-PORT PATCH PANEL: 16 GA CRS
- JACK HOUSING: ABS, UL 94V-0
- SPRING WIRE: SQUARE SPRING WIRE, TEMPERED PHOSPHOR BRONZE
- 110 CONNECTOR: COPPER ALLOY, 100 MICRO INCHES OF BRIGHT SOLDER
OVER 100 MICRO INCHES OF NICKEL UNDERPLATE
- GOLD RATING: 50 MICRO INCHES OF GOLD OVER 100 MICRO INCHES OF NICKEL

B. SURFACE FINISH: BLACK POWDER COAT

C. MECHANICAL:

- MATING FORCE: 100 GRAMS MIN/CONTACT
- TEMPERATURE RANGE: -40°~150°F (-40°~66°C)
- PLUG RETENTION IN JACK: 30 LBS (133N) MIN

D. ELECTRICAL:

- CURRENT RATING: 1.5 AMP DC
- CONTACT RESISTANCE: 5 MILOHMS

RJ-45	110 CONNECTOR	UNIVERSAL WIRING	
		T568B	T568A
5	1	WHITE/BLUE	WHITE/BLUE
4	2	BLUE	BLUE
1	3	WHITE/ORANGE	WHITE/GREEN
2	4	ORANGE	GREEN
3	5	WHITE/GREEN	WHITE/ORANGE
6	6	GREEN	ORANGE
7	7	WHITE/BROWN	WHITE/BROWN
8	8	BROWN	BROWN

CATEGORY 6 CONNECTING HARDWARE REQUIREMENTS												
FREQUENCY (MHz)	1.0	4.0	8.0	10.0	16.0	20.0	25.0	31.25	62.5	100	200	250
NEXT LOSS (db)	75.0	75.0	75.0	74.0	69.9	68.0	66.0	64.1	58.1	54.0	48.0	46.0
FEXT LOSS (db)	75.0	71.1	65.0	63.1	59.0	57.1	55.1	53.2	47.2	43.1	37.1	35.1
RETURN LOSS (db)	30.0	30.0	30.0	30.0	30.0	30.0	30.0	30.0	28.1	24.0	18.0	16.0
INSERTION LOSS(db)	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.11	0.16	0.20	0.28	0.32

UL US FILE NO. 125268

PATCH PANEL, CAT 6, 48-PORT, 2 RMS

ITEM NO. ICMPP04860

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PAGE NO. 2

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Kwik-Fit® Compression EMT has an integral steel compression fitting formed on one end of each length of EMT. Trade sizes 2 1/2-4

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Contact your local Allied Tube & Conduit electrical distributor, or visit www.alliedeg.com.

ALLIED E-Z PULL[®] EMT



E-Z Pull[®] EMT Specifications

Manufactured for Long Life

Allied EMT is precision manufactured from high grade mild strip steel for exceptional durability and long-lasting life. Allied EMT is hot galvanized using Allied's patented in-line Flo-Coat[®] process. This process combines zinc, a conversion coating, and a clear organic polymer top-coat to form a triple layer of protection against corrosion and abrasion.

EMI SHIELDING

Allied EMT greatly reduces electromagnetic fields, effectively shielding computers and sensitive electronic equipment from the electromagnetic interference caused by power distribution systems.

FULL CODES & STANDARDS COMPLIANCE

Allied EMT is listed to Underwriters Laboratories Safety Standard UL 797 and meets ANSI C80.3, which have been adopted as federal specifications in lieu of WWC 563. EMT is recognized as an equipment grounding conductor by NEC Section 250-118. Documentation for compliance with NEC Article 250 is also available in the GEMI (Grounding and Electro-Magnetic Interference) analysis software and related research studies found at the www.alliedeg.com website.

Installation of EMT shall be in accordance with the National Electrical Code and the UL listing information. Allied EMT is listed in category FJMX. Master bundles conform to NEMA Standard RN2.

SPECIFICATION DATA

To specify Allied EMT, include the following: Electrical Metallic Tubing shall be equal to that manufactured by Allied Tube & Conduit Corporation. EMT shall be hot galvanized steel O.D. with an organic corrosion resistant I.D. coating and shall be produced in accordance with U.L. Safety Standard #797 and ANSI C80.3 and shall be listed by a nationally recognized testing laboratory with follow-up service. Where **Kwik-Fit[®] EMT** is used it shall also meet U.L. Safety Standard #514-B. Note that these U.L. and ANSI standards have been adopted by the federal government and separate military specifications no longer exist.

• Allied Tube & Conduit - Electrical
16100 S. Lathrop Avenue, Harvey, IL 60426
Tel. 800-882-5543 Fax 708-339-0615



Weights and Dimensions for Electrical Metallic Tubing

Trade Size Designator		Approx. Wt. Per 100 Ft. (30.5M)		Nominal Outside Diameter ¹		Nominal Wall Thickness		Quantity In Master Bundle	
U.S.	Metric	lb.	kg.	in.	mm	in.	mm	ft.	m
1/2	16	30	13.6	0.706	17.9	0.042	1.07	7000	2135.0
3/4	21	46	20.9	0.922	23.4	0.049	1.25	5000	1525.0
1	27	67	30.4	1.163	29.5	0.057	1.45	3000	915.0
1-1/4	35	101	45.8	1.510	38.4	0.065	1.65	2000	610.0
1-1/2	41	116	52.6	1.740	44.2	0.065	1.65	1500	457.5
2	53	148	67.1	2.197	55.8	0.065	1.65	1200	366.0
2-1/2	63	216	98.0	2.875	73.0	0.072	1.83	610	186.1
3	78	263	119.3	3.500	88.9	0.072	1.83	510	155.6
3-1/2	91	249	158.3	4.000	101.6	0.083	2.11	370	112.9
4	103	393	178.2	4.500	114.3	0.083	2.11	300	91.5

¹Outside diameter tolerances:

+/- .005 in. (.13mm) for trade sizes 1/2 (16mm) through 2 (53mm);
+/- .010 in. (.25mm) for trade sizes 2-1/2 (63mm);
+/- .015 in. (.38mm) for trade size 3 (78mm);
+/- .020 in. (.51mm) for trade sizes 3-1/2 (91mm) and 4 (103mm).

NOTE: Length = 10 ft. (3.05m) with a tolerance of ± .25 in. (6.35 mm)

Weights and Dimensions for Kwik-Fit EMT

Trade Size Designator		Approx. Wt. Per 100 Ft. (30.5M)		Nominal Outside Diameter ¹		Nominal Wall Thickness		Quantity In Master Bundle	
U.S.	Metric	lb.	kg.	in.	mm	in.	mm	ft.	m
2	53	148	67.1	2.197	55.8	0.065	1.65	500	152.4
2-1/2	63	216	98.0	2.875	73.0	0.072	1.83	350	106.8
3	78	263	119.3	3.500	88.9	0.072	1.83	300	91.5
3-1/2	91	349	158.3	4.000	101.6	0.083	2.11	250	76.3
4	103	393	178.2	4.500	114.3	0.083	2.11	250	76.3

¹Outside diameter tolerances:

+/- .005 in. (.13mm) for trade size 2 (53mm);
+/- .010 in. (.25mm) for trade size 2-1/2 (63mm);
+/- .015 in. (.38mm) for trade size 3 (78mm);
+/- .020 in. (.51mm) for trade sizes 3-1/2 (91mm) and 4 (103mm).

NOTE: Length = 10 ft. (3.05m) with a tolerance of ± .25 in. (6.35 mm)

For more information, contact Allied at (800) 882-5543,
or visit our website at www.alliedeg.com

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Dell PowerVault MD1000 Direct Attached Storage Array Details

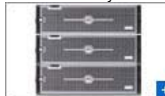


High Capacity Server Storage Expansion

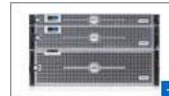
PowerVault MD1000 is a 3Gb/s SAS expansion enclosure that offers seamless capacity expansion for existing PowerVault MD3000 and MD3000i arrays.

- Expand with up to two enclosures behind the PowerVault MD3000 or MD3000i
- Enables mixing SAS and SATA drives in a single enclosure
- 15 3.5 inch drives in just 3U of rack space

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Features


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PERC RAID Controllers

PERC 6/E supports RAID levels 0, 1, 5, 6, 10, 50 and 60.
PERC 5/E supports RAID levels 0, 1, 5, 10 and 50.

Drives and Capacity

Hard Drives

Up to fifteen (15) 1-inch-by-3.5-inch SAS hot-pluggable 3.0 Gbps hard drives, at speeds of 10,000 or 15,000 RPM
Up to fifteen (15) 1-inch-by-3.5-inch SATA II hot-pluggable 3.0 Gbps hard drives, at speeds of 7,200 RPM

Drive speeds and capacities

SAS Drives

15,000 RPM SAS drives available in 73GB, 146GB, 300GB, 450GB and 600GB
10,000 RPM SAS drives available in 300GB, 400GB¹ and 600GB
Nearline SAS (7,200 RPM) drives available in 500GB, 750GB¹ or 1TB¹

SATA Drives

7,200 RPM SATA II drives available in 250GB, 500GB, 750GB¹ or 1TB¹
Energy efficient SATA II (5,400 RPM) drives available in 1TB¹ and 2TB¹

Maximum Capacity (per enclosure)

30TB using fifteen 2TB¹ 5,400 RPM SATA II disk drives in one enclosure

Expansion Capabilities

PERC RAID Controller enables expansion to 6 enclosures
More Details on [PERC](#)

PowerVault MD3000 and MD3000i enable expansion to 3 enclosures

Connectivity

Support for either of the following configurations:

- Unified mode (single path) for daisy chaining of up to 6 enclosures per PERC 6/E controller (3 enclosures per port, single path)
- Unified mode (redundant path) for daisy chaining up to 3 enclosures per PERC 6/E controller (3 enclosures connected to both ports via redundant path cabling)
- Split mode with dual Enclosure Management Modules providing direct connectivity to drives 0 through 6 and a separate connectivity to drives 7 through 14

Enclosure Management Modules (EMM)

EMMs

1 or 2 modules
A second EMM provides redundant enclosure management capability

Back-Panel Connectors

SAS connectors (per EMM)

- 1 12.0 Gbps SAS (SFF 8470) "IN" connector for connection to the host
- 1 12.0 Gbps SAS (SFF 8470) "OUT" connector for expansion to an additional enclosure

Serial connector (per EMM)



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1 6-pin UART mini-DIN connector (for factory use only)

LED Indicators

Front panel

- 1 two-color LED indicator for system status
- 2 single-color LED indicators for power and split mod

Hard-drive carrier

- 1 single-color activity LED
- 1 two-color LED status indicator per drive

EMM

- 3 two-color LED status indicators: one each for the two EMM SAS ports and one for the EMM status

Power supply/cooling fan module

- 3 LED status indicators for power supply status, power supply/fan fault and AC status

Power Supplies

Wattage

- 488 W maximum continuous; 550 W peak

Heat dissipation

- 200 W

Voltage

- 100-240 V rated (actual 90-264 V)

Frequency

- 47-63 Hz

Amperage

- 7.2 A at 100 V, 3.6 A at 200 V

Available Hard Drive Power (per slot)

Supported consumption

- Up to 1.3 A at +12 V; Up to 1.5 A at +5 V

Physical

Height

- 13.11 cm (5.16 inches)

Width

- 44.63 cm (17.57 inches)

Depth

- 48.01 cm (18.9 inches)

Weight

- 35.37 kg (78 lb) (maximum configuration)

Environmental

Temperature:

- Operating: 10° to 35°C (50° to 95°F)
- Storage: -40° to 65°C (-40° to 149°F)

Relative humidity

- Operating: 20% to 80% (non-condensing)
- Storage: 5% to 95% (non-condensing)

Altitude

- Operating: -16 to 3048 m (-50 to 10,000 ft)
- Storage: -16 to 10,600 m (-50 to 35,000 ft)

BTU per hour

- 1430

Supported Operating Systems

Refer to RAID Card for details on supported Operating Systems:

[PERC 5/E](#)

[PERC 6/E](#)

[MD3000](#)

[MD3000i](#)

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snWW28

AXIS 215 PTZ Network Camera

Compact pan/tilt/zoom camera for 360° video surveillance.



- > Pan, tilt and zoom
- > 12x optical zoom
- > 360° pan with Auto-flip
- > Day and night function
- > Audio detection alarm
- > Simultaneous MPEG-4 and Motion JPEG

AXIS 215 PTZ Network Camera, with its unique pan/tilt/zoom capabilities and tamper-resistant design, is the perfect solution for video surveillance in retail stores, banks, receptions and schools.

The camera offers advanced remote monitoring with pan, tilt and zoom over IP networks. The total magnification capacity of 48x (12x optical zoom and 4x digital zoom) increases monitoring options with the ability to show a detailed and precise view of the zoomed-in area.

AXIS 215 PTZ has 360° pan capability, thanks to the unique Auto-flip function. Auto-flip allows the camera to simulate a continuous pan beyond the mechanical stop, thereby enabling an operator to continuously follow an object.

The E-flip function flips the image electronically 180°, allowing a person or object to be followed when passing directly below the camera in the correct orientation without a repositioning delay.

The camera has automatic day and night functionality with a removable IR-cut filter, providing color video when there is sufficient light and high quality black and white video in dark conditions.

AXIS 215 PTZ can send an alarm at a configurable audio detection level. Its two-way audio support allows users to communicate with visitors and intruders.

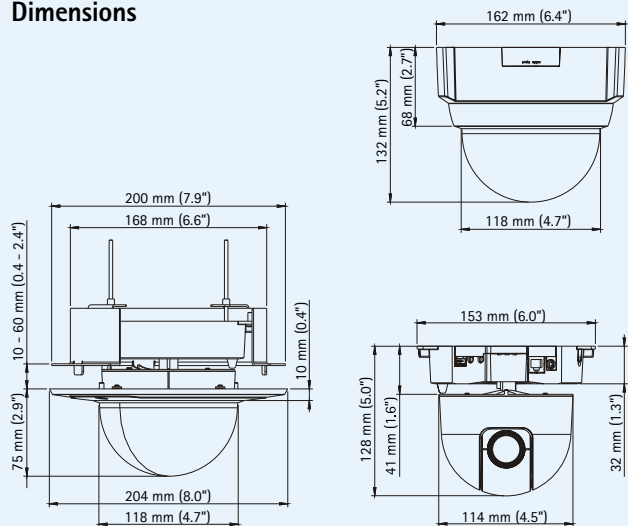
Simultaneous MPEG-4 and Motion JPEG video streams allow for optimization in both image quality and bandwidth efficiency.



Technical specifications – AXIS 215 PTZ Network Camera

Camera		Network	
Models	AXIS 215 PTZ 60 Hz/NTSC AXIS 215 PTZ 50 Hz/PAL	Security	Password protection, IP address filtering, HTTPS encryption, IEEE 802.1X network access control
Image sensor	1/4" interlaced CCD	Supported protocols	IPv4/v6, HTTP, HTTPS, QoS Layer 3 DiffServ, FTP, SMTP, Bonjour, UPnP, SNMPv1/v2c/v3 (MIB-II), DNS, DynDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, RTCP, ICMP, DHCP, ARP, SOCKS
Lens	3.8 – 46 mm, F1.6 – F2.7, automatic day/night, autofocus Angle of view, horizontal: 4.4° – 51.6°	System integration	
Minimum illumination	Color: 1 lux at 30 IRE, F1.6 B/W: 0.3 lux at 30 IRE, F1.6	Application Programming Interface	Open API for software integration, including VAPIX® from Axis Communications available at www.axis.com
Shutter time	NTSC: 1/50000 to 4/3 s PAL: 1/50000 to 8/5 s	Intelligent video	Video motion detection, audio detection
Pan/Tilt/Zoom	20 preset positions Auto-flip, E-flip ±170° (360° via Auto-flip) pan range, 180°/s pan speed 180° tilt range, 140°/s tilt speed 12x optical, 4x digital zoom Control queue, image freeze, sequence mode Support Windows compatible joysticks Designed for operator control	Alarm triggers	Intelligent video and external input
Video		Alarm events	File upload via FTP, HTTP and email Notification via email, HTTP and TCP External output activation
Video compression	MPEG-4 Part 2 (ISO/IEC 14496-2) Motion JPEG	Video buffer	9 MB pre-and post alarm
Resolutions	NTSC: 704x480 to 176x120 PAL: 704x576 to 176x144	General	
Frame rate MPEG-4	Up to 30/25 (NTSC/PAL) in 2CIF/CIF/QCIF Up to 26/22 (NTSC/PAL) in 4CIF/2CIFExp	Processors and memory	ETRAX FS, ARTPEC-2, 32 MB RAM, 8 MB Flash
Frame rate Motion JPEG	Up to 30/25 (NTSC/PAL) in all resolutions	Power	12 V DC ±5%, max 14.5 W
Video streaming	Simultaneous MPEG-4 and Motion JPEG Controllable frame rate and bandwidth VBR/CBR MPEG-4 ISMA compatible	Connectors	RJ-45 for 10BASE-T/100BASE-TX Terminal block for 1 alarm input, 1 output and power out for I/O 3.5 mm mic/line in, 3.5 mm line out
Image settings	Compression, color, brightness, sharpness, white balance, exposure control, backlight compensation, day/night Rotation 0°, 180° Aspect ratio correction Text and image overlay De-interlace (4CIF resolution)	Operating conditions	0 – 45 °C (32 – 113 °F) Humidity 20 – 80% RH (non-condensing)
Audio		Approvals	EN 55022 Class B, EN 55024, EN 61000-3-2, EN 61000-3-3, EN 60950-1, FCC Part 15 Subpart B Class B, ICES-003 Class B, C-tick AS/NZS 3548 Power supply: UL, CSA, CE
Audio streaming	Two-way, full or half duplex	Weight	730 g (1.6 lb.) incl hard ceiling cover 1260 g (2.8 lb.) incl drop ceiling mounting bracket and cover
Audio compression	G.711 PCM 8 kHz 64kbit/s G.726 ADPCM 8 kHz 32 or 24 kbit/s	Included accessories	Installation Guide, CD with User's Manual, recording software, installation and management tools, hard ceiling and drop ceiling mount kits, indoor power supply, transparent and smoked domes, Windows decoder 1-user license
Audio input/output	External microphone input or line input, line level output		

Dimensions



More information is available at www.axis.com

Optional accessories

Various housings



AXIS 295 Video Surveillance Joystick



AXIS T90A illuminators



For information on AXIS Camera Station and video management software from Axis' Application Development Partners, see www.axis.com/products/video/software/

AXIS P33 Network Camera Series

Fixed domes for any environment with remote focus and zoom.



- > High-performance video including HDTV quality
- > Multiple H.264 video streams
- > Easy installation with remote focus and zoom
- > Outdoor-ready models designed for extreme temperatures
- > Power over Ethernet

AXIS P33 Network Cameras constitute a series of indoor and outdoor-ready fixed domes designed for efficient installation. Offering high performance video, including HDTV image quality and multiple H.264 streams, these cameras are ideal for unobtrusive video surveillance in exposed areas such as airports, subways, retail stores, schools and university campuses.

AXIS P33 Series delivers superb video quality in 30 frames per second in full resolution. AXIS P3343 Network Cameras provide SVGA resolution, whereas the AXIS P3344 models offer 1MP, or HDTV 720p in compliance with the SMPTE standard in resolution, color representation and frame rate.

AXIS P33 Network Cameras support automatic day and night functionality with removable infrared-cut filter for increased light sensitivity.

AXIS P33 Series provides multiple, individually configurable video streams in H.264 compression, which greatly optimizes bandwidth and storage without compromising image quality. Motion JPEG is also supported for increased flexibility.

The remote focus feature allows for convenient installation eliminating the need for hands-on focusing at the camera, and the remote zoom and pixel counter features ensure that the camera's viewing angle is optimized for the scene and pixel resolution.

AXIS P33 Network Cameras range from standard indoor models to vandal-resistant outdoor models, perfectly adapted for harsh environments. All models in AXIS P33 Series have low, environment friendly power consumption, supplied by standard Power over Ethernet (IEEE 802.3af). This is the case even for the weather-proof models that operate in extreme temperatures from -40° to 55° C (-40° to 131 °F).



Fixed domes designed for efficient installation – indoors or outdoors

AXIS P33 Series is the perfect choice for a wide range of demanding video applications in outdoor and indoor environments. AXIS P33 Network Cameras are designed for professional video surveillance with easy and reliable installation in focus.

Outdoor-ready installation for extreme temperatures

The outdoor models of AXIS P33 Series are specially designed for reliable, vandal-resistant and weather-proof installation, with pre-installed heater and fan, and an integrated dehumidifying membrane eliminating any humidity caught in the camera casing during installation. These cameras come with a 5 m (16 ft.) Ethernet cable with a pre-mounted, specially designed gasket, enabling flush wall mounting and requiring no additional sealant. A weather shield is also included for effective protection against reflections from sunlight, or build-ups of rain or snow.

Mounting options

AXIS P33 Series offers a wide range of optional indoor and outdoor mounting kits for installation in a drop ceiling or on a wall, pole, corner or junction box, etc. Both indoor and outdoor camera models include a smoked transparent cover as an alternative to the clear cover, for additional flexibility.

Easy installation with remote focus and zoom

AXIS P33 Network Cameras offer unique installation capabilities with remote focus and zoom. The remote focus feature enables convenient focusing over the network, eliminating the need for hands-on fine-tuning at the camera. The remote zoom functionality ensures that the viewing angle is optimized for the area to be monitored.

Unique pixel counter feature

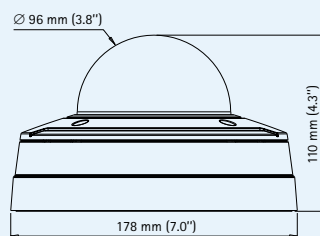
The unique pixel counter offered in AXIS P33 Series allows the installer to easily verify that the camera installation fulfills any regulatory or specific customer requirements, for example calculating the pixel resolution of the face of a person passing a doorway monitored by the camera.



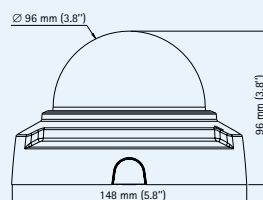
Unique pixel counter feature



AXIS P3343-VE /P3344-VE

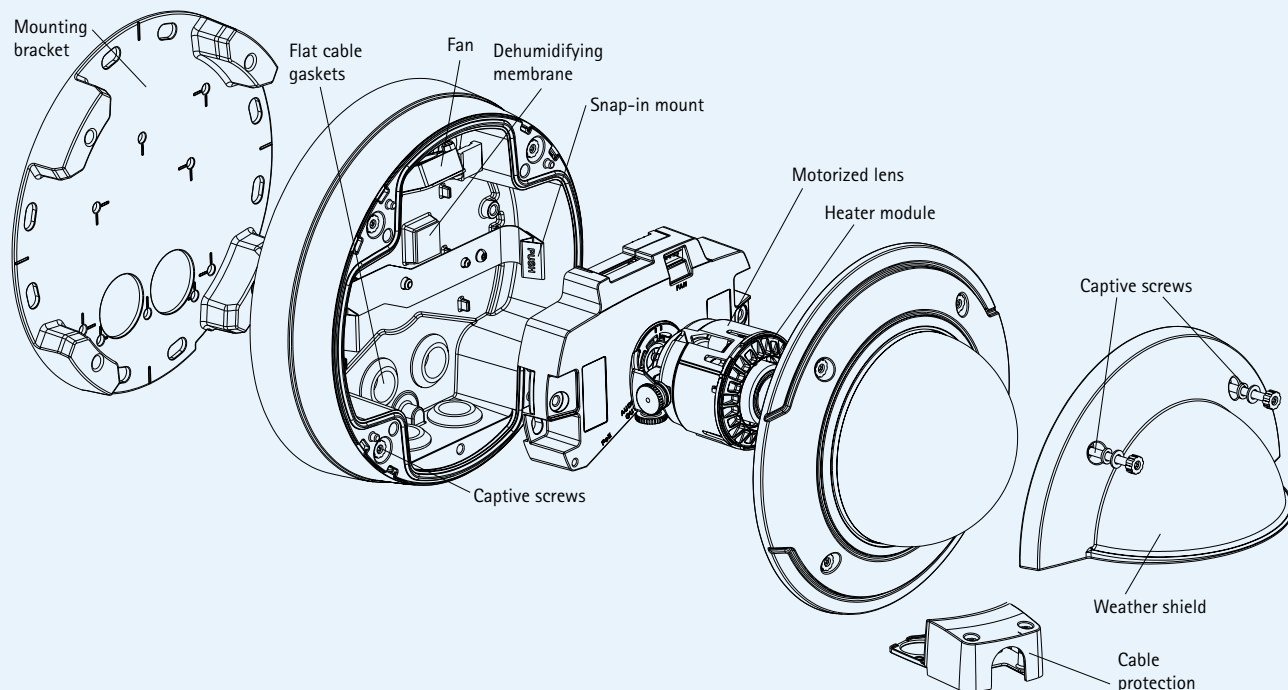


AXIS P3343/-V/P3344/-V

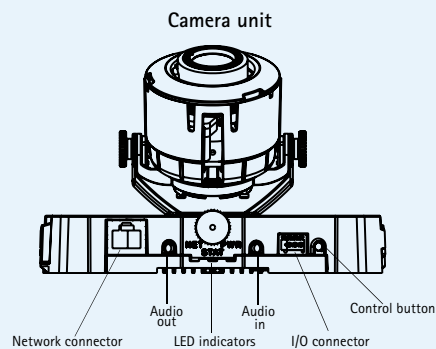
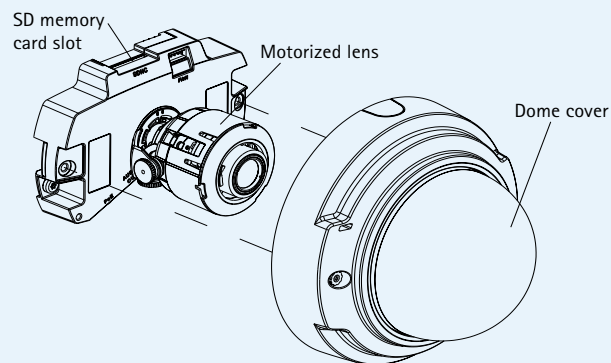


Extreme temperature installation

AXIS P3343-VE/P3344-VE



AXIS P3343/-V/P3344/-V



Optional accessories for outdoor models

Pendant adapter kit including weather shield



AXIS T91A Brackets



Wall



Corner

I/O audio cable, 5 m (16 ft.)



Optional accessories for indoor models

AXIS T91A Brackets



Ceiling



Wall

Mounting bracket



Drop-ceiling mount kit with transparent or smoked cover



Pendant adapter kit



For information on AXIS Camera Station and video management software from Axis' Application Development Partners, see www.axis.com/products/video/software/

Technical Specifications – AXIS P33 Network Camera Series

37032/EN/1/0910

Camera		Network	
Models	AXIS P3343: SVGA resolution, tamper-resistant, indoor AXIS P3343-V: SVGA, vandal-resistant, indoor AXIS P3343-VE: SVGA, vandal-resistant, outdoor AXIS P3344: 1MP/HDTV 720p, tamper-resistant, indoor AXIS P3344-V: 1MP/HDTV 720p, vandal-resistant, indoor AXIS P3344-VE: 1MP/HDTV 720p, vandal-resistant, outdoor 6mm or 12mm as suffix specifies lens option Note: AXIS P3301/-V are not part of AXIS P33 Series	Security	Password protection, IP address filtering, digest authentication, user access log, IEEE 802.1X* network access control, HTTPS* encryption
Image sensor	1/4" Progressive scan RGB CMOS	Supported protocols	IPv4/v6, HTTP, HTTPS*, QoS Layer 3 DiffServ, FTP, SMTP, Bonjour, UPnP, SNMPv1/v2c/v3(MIB-II), DNS, DynDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, RTCP, ICMP, DHCP, ARP, SOCKS
Lens	Varifocal, DC-iris, remote focus and zoom AXIS P3343/-V/-VE 6mm: 2.5–6 mm, F1.2, angle of view*: 34°–72° AXIS P3343/-V/-VE 12mm: 3.3–12 mm, F1.4, angle of view*: 17°–54° AXIS P3344/-V/-VE 6mm: 2.5–6 mm, F1.4, angle of view*: 40°–87° AXIS P3344/-V/-VE 12mm: 3.3–12 mm, F1.6, angle of view*: 20°–70° * horizontal	System integration	
Day and night	Automatically removable infrared-cut filter	Application Programming Interface	Open API for software integration, including VAPIX® from Axis Communications available at www.axis.com
Minimum illumination	AXIS P3343/-V/-VE 6mm: Color: 0.2 lux, F1.2, B/W: 0.04 lux, F1.2 AXIS P3343/-V/-VE 12mm: Color: 0.3 lux, F1.4, B/W: 0.05 lux, F1.4 AXIS P3344/-V/-VE 6mm: Color: 0.3 lux, F1.4, B/W: 0.05 lux, F1.4 AXIS P3344/-V/-VE 12 mm: Color: 0.4 lux, F1.6, B/W: 0.06 lux, F1.6	Intelligent video	Video motion detection, active tampering alarm, audio detection
Shutter time	1/25000 s to 1/6 s	Alarm triggers	Intelligent video, external input
Camera angle adjustment	Pan 360°, tilt 170°, rotation 340°	Alarm events	File upload via FTP, HTTP and email Notification via email, HTTP and TCP External output activation Video recording to local storage
Pan/Tilt/Zoom	Digital PTZ, preset positions, guard tour	Video buffer	48 MB pre- and post alarm
Video		General	
Video compression	H.264 (MPEG-4 Part 10/AVC) Motion JPEG	Casing	Polycarbonate transparent cover Aluminum inner camera module with encapsulated electronics AXIS P3343/P3344: Tamper-resistant plastic casing AXIS P3343-V/P3344-V: 1000 kg (2200 lb.) impact-resistant aluminum casing AXIS P3343-VE/P3344-VE: 1000 kg (2200 lb.) impact-resistant IP66- and NEMA 4X-rated aluminum casing with integrated dehumidifying membrane
Resolutions	AXIS P3343/-V/-VE: 800x600 to 160x90 AXIS P3344/-V/-VE: 1280x800 to 160x90	Processor and memory	ARTPEC-3, 128 MB RAM, 128 MB Flash
Frame rate H.264	30 fps in all resolutions	Power	Power over Ethernet IEEE 802.3af AXIS P3343/-V and AXIS P3344/-V: Class 2 AXIS P3343-VE/P3344-VE: Class 3
Frame rate Motion JPEG	30 fps in all resolutions	Connectors	RJ-45 10BASE-T/100BASE-TX PoE Terminal block for 1 alarm input and 1 output 3.5 mm mic/line in, 3.5 mm line out
Video streaming	Multi-stream H.264 and Motion JPEG Controllable frame rate and bandwidth VBR/CBR H.264 Figures below specify the number of individually configurable streams provided in full resolution and frame rate (see details above) when using one compression format. More streams can be achieved if identical or limited in frame rate/resolution. AXIS P3343/-V/-VE: H.264/Motion JPEG: 2 streams AXIS P3344/-V/-VE: H.264: 1 stream (2 streams in HDTV 720p); Motion JPEG: 1 stream	Local storage	SD/SDHC memory card slot (card not included)
Image settings	Compression, color, brightness, sharpness, contrast, white balance, exposure control, exposure zones, backlight compensation, wide dynamic range, fine tuning of behavior at low light Rotation: 0°, 90°, 180°, 270° Mirroring of images Text and image overlay Privacy mask	Operating conditions	AXIS P3343/-V and AXIS P3344/-V: 0 to 50 °C (32 to 122 °F) Humidity 20 – 80% RH (non-condensing) AXIS P3343-VE/P3344-VE: -40 to 55 °C (-40 to 131 °F)
Audio		Approvals	EN 55022 Class B, EN 61000-3-2, EN 61000-3-3, EN 55024, FCC Part 15 Subpart B Class B, ICES-003 Class B, VCCI Class B, C-tick AS/NZS CISPR 22, EN 60950-1 AXIS P3343-VE/P3344-VE: IEC 60529 IP66, NEMA 250 Type 4X
Audio streaming	Two-way	Weight	AXIS P3343/P3344: 445 g (1.0 lb.) AXIS P3343-V/P3344-V: 660 g (1.5 lb.) AXIS P3343-VE/P3344-VE: 1.4 kg (3.1 lb.)
Audio compression	AAC LC 8/16 kHz G.711 PCM 8 kHz G.726 ADPCM 8 kHz Configurable bit rate	Included accessories	Mounting and connector kits, Installation Guide, CD with installation tools, recording software and User's Manual, Windows decoder 1-user license, smoked transparent cover AXIS P3343-VE/P3344-VE: Mounting bracket, cable shield, weather shield, 5 m (16ft.) network cable with pre-mounted gasket
Audio input/output	External microphone input or line input, line level output AXIS P3343/-V and AXIS P3344/-V: Built-in microphone		

* This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (www.openssl.org)

More information is available at www.axis.com

AXIS P3301/-V and P3304/-V Network Cameras

Discreet video surveillance with outstanding H.264 performance.



- > Superior image quality
- > Multiple H.264 streams
- > Unobtrusive and compact design
- > Intelligent video capabilities
- > Power over Ethernet
- > ONVIF support

AXIS P3301/-V and AXIS P3304/-V Network Cameras are designed for indoor environments where discreet and compact solutions are required. Offering superior video quality in multiple, efficiently compressed H.264 streams, they constitute the perfect solution for video surveillance systems with tough quality and efficiency requirements, e.g. in retail stores, schools, prisons, banks and airports.

AXIS P3301/-V and AXIS P3304/-V offer superior image quality including progressive scan and wide dynamic range, providing crisp and clear images of both illuminated and low-light areas. AXIS P3301/-V are VGA cameras and AXIS P3304/-V provide HDTV 720p or 1 megapixel resolution at full frame rate.

Multiple H.264 streams, as well as Motion JPEG streams, can be provided either in full frame rate or individually optimized for different quality needs and bandwidth constraints.

The vandal-resistant AXIS P3301-V and AXIS P3304-V, and AXIS P3301 and AXIS P3304 with their tamper-resistant casing, are fixed domes specifically adapted for unobtrusive video surveillance in exposed indoor environments.

All network cameras include intelligent capabilities such as video motion detection, audio detection and detection of camera tampering attempts like blocking or spray-painting.

Power over Ethernet supplies power to the cameras via the network, eliminating the need for power cables and reducing installation costs. The pixel counter helps the installer verify that the pixel resolution fulfills specific requirements for identification purposes.

AXIS P3301/-V Network Cameras support the ONVIF specification for interoperability between network video products.



Technical specifications – AXIS P3301/-V and AXIS P3304/-V Network Cameras

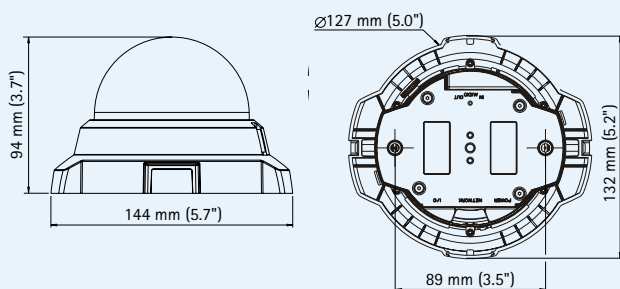
Camera	
Models	AXIS P3301: VGA resolution, tamper-resistant casing AXIS P3301-V: VGA resolution, vandal-resistant casing AXIS P3304: 1MP/HDTV 720p, tamper-resistant casing AXIS P3304-V: 1MP/HDTV 720p, vandal-resistant casing
Image sensor	1/4" progressive scan RGB CMOS
Lens	AXIS P3301/-V: Varifocal 2.8 - 10 mm, 72° - 23° view*, F1.3, DC-iris AXIS P3304/-V: Varifocal 2.8 - 10 mm, 80° - 22° view*, F1.7, DC-iris *horizontal angle of view
Minimum illumination	AXIS P3301/-V: 1 lux, F1.3 AXIS P3304/-V: 0.9 lux F1.7
Shutter time	AXIS P3301/-V: 1/20000 s to 1/4 s AXIS P3304/-V: 1/24500 s to 1/6 s
Camera angle adjustment	Pan 360°, tilt 170°, rotation 340°
Pan/Tilt/Zoom	AXIS P3304/-V: Digital PTZ, preset positions, guard tour
Video	
Video compression	H.264 (MPEG-4 Part 10/AVC) Motion JPEG
Resolutions	AXIS P3301/-V: 640x480 to 160x120 AXIS P3304/-V: 1280x800 to 160x90
Frame rate H.264	30 fps in all resolutions
Frame rate Motion JPEG	30 fps in all resolutions
Video streaming	Multiple, individually configurable streams in H.264 and Motion JPEG Controllable frame rate and bandwidth VBR/CBR H.264
Image settings	Compression, color, brightness, sharpness, contrast, white balance, exposure control, exposure zones, backlight compensation, wide dynamic range - dynamic contrast, fine tuning of behavior at low light, rotation, mirroring of images Text and image overlay, privacy mask
Audio	
Audio streaming	Two-way
Audio compression	AAC LC 8 kHz, 16 kHz. G.711 PCM 8 kHz. G.726 ADPCM 8 kHz Configurable bit rate
Audio input/output	Built-in microphone, external microphone input or line input, line level output
Network	
Security	Password protection, IP address filtering, HTTPS** encryption, IEEE 802.1X network access control, digest authentication, user access log
Supported protocols	IPv4/v6, HTTP, HTTPS**, QoS Layer 3 DiffServ, FTP, SMTP, Bonjour, UPnP, SNMPv1/v2c/v3(MIB-II), DNS, DynDNS, NTP, RTSP, RTP, TCP, UDP, IGMP, RTCP, ICMP, DHCP, ARP, SOCKS

System integration	
Application Programming Interface	Open API for software integration, including VAPIX® and AXIS Camera Application Platform from Axis Communications, specifications available at www.axis.com Support for AXIS Video Hosting System (AVHS) with One-Click Camera connection AXIS P3301/-V: API also includes the ONVIF specification available at www.onvif.org
Intelligent video	Video motion detection, active tampering alarm, audio detection Support for AXIS Camera Application Platform enabling installation of additional applications
Alarm triggers	Intelligent video and external input
Alarm events	File upload via FTP, HTTP and email Notification via email, HTTP and TCP External output activation
Video buffer	AXIS P3301/-V: 48 MB pre- and post alarm AXIS P3304/-V: 40 MB pre- and post alarm
Installation aids in software	Pixel counter
General	
Casing	Polycarbonate transparent cover Metal inner camera module with encapsulated electronics AXIS P3301/P3304: Tamper-resistant plastic casing AXIS P3301-V/P3304-V: 1000 kg (2200 lb.) impact-resistant metal casing
Processor and memory	ARTPEC-3, 128 MB RAM, 128 MB Flash
Power	4.9 - 5.1 V DC max. 4.7 W Power over Ethernet IEEE 802.3af Class 2 (max. 4.7 W)
Connectors	RJ-45 10BASE-T/100BASE-TX PoE, DC jack Terminal block for 1 alarm input and 1 output 3.5 mm mic/line in, 3.5 mm line out
Operating conditions	0 - 50 °C (32 - 122 °F) Humidity 20 - 80% RH (non-condensing)
Approvals	EN 55022 Class B, EN 61000-3-2, EN 61000-3-3, EN 55024, FCC Part 15 Subpart B Class B, ICES-003 Class B, VCCI Class B, C-tick AS/NZS CISPR 22, EN 60950-1 Power supply: EN 60950-1, UL, CSA
Weight	AXIS P3301: 430 g (1.0 lb.), AXIS P3304: 440 g (1.0 lb.) AXIS P3301-V: 580 g (1.3 lb.), AXIS P3304-V: 590 g (1.3 lb.)
Included accessories	Power supply, mounting and connector kits, Installation Guide, CD with installation tools, recording software and User's Manual, Windows decoder 1-user license
Video management software (not incl.)	AXIS Camera Station - Video management software for viewing and recording up to 50 cameras. For more software application via partners, see www.axis.com/products/video/software/

** This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit. (www.openssl.org)

More information is available at www.axis.com

Dimensions



Optional accessories

Drop-ceiling mount kit, transparent or smoked cover

Optional casings with smoked cover or black casing





HP ProCurve Switch 3500 Series

Product overview

The HP ProCurve Switch 3500 Series consists of the most advanced intelligent edge switches in the HP ProCurve Networking product line. The 3500 series includes 24-port and 48-port stackable switches. The foundation for all these switches is a purpose-built, programmable ProVision ASIC that allows the most demanding networking features, such as Quality of Service (QoS) and security, to be implemented in a scalable yet granular fashion. With a variety of Gigabit and 10/100 interfaces, integrated PoE+, PoE and Non-PoE options, versatile 10-GbE connectivity (CX4, X2, and SFP+) on Gigabit switches, the 3500 switches offer excellent investment protection, flexibility, and scalability, as well as ease of deployment, operation, and maintenance.

Key features

- Advanced access layer and small distribution
- Enterprise-class performance and security
- Intelligent Edge feature set with L2 to L4 support
- Scalable 10/100/1000 PoE+ and 10/100 PoE
- Unified core-to-edge ProVision software

Features and benefits

Industry-leading warranty



Management

- **Remote Intelligent Mirroring:** mirrors selected ingress/egress traffic based on ACL, port, MAC address, or VLAN to a local or remote 8200zl/6600/6200yl/5400zl/3500 switch anywhere on the network
- **RMON, XRMON, and sFlow v5:** provide advanced monitoring and reporting capabilities for statistics, history, alarms, and events
- **IEEE 802.1AB Link Layer Discovery Protocol (LLDP):** automated device discovery protocol provides easy mapping by network management applications
- **Uni-Directional Link Detection (UDLD):** monitors cable between two switches and shuts down the ports on both ends if the cable is broken turning the bi-directional link into uni-directional; this prevents network problems such as loops
- **Management simplicity:** provides ProCurve-common networking features and CLI implementation (common across ProCurve 8200zl/6600/6200yl/5400zl/3500 switches)
- **Command authorization:** leverages RADIUS to link a custom list of CLI commands to individual network administrator's login; also provides an audit trail
- **Friendly port names:** allow assignment of descriptive names to ports
- **Dual flash images:** provides independent primary and secondary operating system files for backup while upgrading
- **Multiple configuration files:** can be stored to the flash image

Connectivity

• IPv6:

- **IPv6 host:** enables switches to be managed and deployed at the IPv6 network's edge
 - **Dual stack (IPv4/IPv6):** transitions from IPv4 to IPv6, supporting connectivity for both protocols
 - **MLD snooping:** forwards IPv6 multicast traffic to the appropriate interface
 - **IPv6 ACL/QoS:** supports ACL and QoS for IPv6 network traffic
 - **IPv6 ready:** switch hardware can support IPv6 routing, tunneling, and security—available when enabled via software updates in follow-on releases
- **IEEE 802.3af Power over Ethernet (POE):** provides up to 15.4 W per port to IEEE 802.3af-compliant PoE powered devices such as IP phones, wireless access points, and security cameras
 - **NEW IEEE 802.3at Power Over Ethernet Plus (PoE+):** provides up to 30 W per port to IEEE 802.3 for PoE/PoE+ powered devices such as video IP phones, IEEE 802.11n wireless access points, and advanced pan/zoom/tilt security cameras
 - **Prestandard PoE support:** detects and provides power to prestandard PoE devices; see list of supported devices in the product FAQs at www.procurve.com
 - **Jumbo frames:** on Gigabit and 10-Gb ports, allow high-performance remote backup and disaster-recovery services
 - **Auto-MDIX:** automatically adjusts for straight-through or crossover cables on all 10/100 and 10/100/1000 ports

Performance

- **High-speed/capacity architecture:** up to 153.6 Gbps crossbar switching fabric provides intra- and inter-module switching with up to 111.5 million pps throughput on the purpose-built ProVision ASICs
- **Selectable queue configurations:** increase performance by selecting the number of queues and associated memory buffering that best meet the requirements of your network applications

◆ For as long as you own the product, with next-business-day advance replacement (available in most countries). The following hardware products have a five-year hardware warranty for the disk drive and lifetime hardware warranty (for as long as you own the product) for the rest of the module: HP ProCurve ONE Services zl Module, HP ProCurve Threat Management Services zl Module, and HP ProCurve MSM765zl Mobility Controller. The following hardware products and their related series modules have a one-year hardware warranty with extensions available: HP ProCurve Routing Switch 9300m series, HP ProCurve Switch 8100fl series, HP ProCurve Network Access Controller 800, and HP ProCurve DCM Controller. The following hardware products have a one-year hardware warranty with extensions available: HP ProCurve M111 Client Bridge, HP ProCurve MSM3xx-R Access Points, HP ProCurve MSM7xx Mobility and Access Controllers, HP ProCurve RF Manager IDS/IPS Systems, HP ProCurve MSM Power Supplies, HP ProCurve 1-Port Power Injector, HP ProCurve CNMS Appliances, and HP ProCurve MSM317 Access Device. Standalone software, upgrades, or licenses may have a different warranty duration. For details, refer to the ProCurve Software License, Warranty, and Support booklet at www.procurve.com/warranty.

Resiliency and high availability

- **Virtual Router Redundancy Protocol (requires Premium License):** VRRP allows groups of two routers to dynamically back each other up to create highly available routed environments
- **IEEE 802.1s Multiple Spanning Tree Protocol:** provides high link availability in multiple VLAN environments by allowing multiple spanning trees; encompasses IEEE 802.1D Spanning Tree Protocol and IEEE 802.1w Rapid Spanning Tree Protocol
- **Server-to-switch distributed trunking:** allows a server to connect to two switches with one logical trunk that consists of multiple physical connections; enables load-balancing and increases resiliency
- **IEEE 802.3ad Link Aggregation Control Protocol (LACP) and ProCurve trunking:** support up to 60 trunks, each with up to 8 links (ports) per trunk

Layer 2 switching

- **IEEE 802.1ad Q-in-Q (requires Premium License):** increases the scalability of an Ethernet network by providing a hierarchical structure; connects multiple LANs on high-speed campus or metro network
- **ProCurve switch meshing:** dynamically load-balances across multiple active redundant links to increase available aggregate bandwidth
- **VLAN support and tagging:** supports the IEEE 802.1Q standard and 2,048 VLANs simultaneously
- **IEEE 802.1v protocol VLANs:** isolate select non-IPv4 protocols automatically into their own VLANs
- **GARP VLAN Registration Protocol:** allows automatic learning and dynamic assignment of VLANs

Layer 3 services

- **UDP helper function:** allows UDP broadcasts to be directed across router interfaces to specific IP unicast or subnet broadcast addresses and prevents server spoofing for UDP services such as DHCP
- **Loopback interface address:** defines an address in RIP and OSPF that can always be reachable, improving diagnostic capability

Layer 3 routing

- **Static IP routing:** provides manually configured routing; includes ECMP capability
- **RIP:** provides RIPv1 and RIPv2 routing
- **OSPF (requires Premium License):** includes host-based ECMP to provide link redundancy/scalable bandwidth and NSSA

Security

- **Access control lists (ACLs):** provide filtering based on the IP field, source/destination IP address/subnet, and source/destination TCP/UDP port number on a per-VLAN or per-port basis
- **Multiple user authentication methods:**
 - **IEEE 802.1X users per port:** provides authentication of multiple IEEE 802.1X users per port; prevents user “piggybacking” on another user’s IEEE 802.1X authentication
 - **Web-based authentication:** authenticates from Web browser for clients that do not support IEEE 802.1X supplicant; customized remediation can be processed on an external Web server
 - **MAC-based authentication:** client is authenticated with the RADIUS server based on client’s MAC address
 - **Concurrent IEEE 802.1X, Web, and MAC authentication schemes per port:** switch port will accept up to 32 sessions of IEEE 802.1X, Web, and MAC authentications
- **Virus throttling:** detects traffic patterns typical of WORM-type viruses and either throttles or entirely prevents the virus from spreading across the routed VLANs or bridged interfaces, without requiring external appliances
- **DHCP protection:** blocks DHCP packets from unauthorized DHCP servers, preventing denial-of-service attacks
- **Secure management access:** securely encrypts all access methods (CLI, GUI, or MIB) through SSHv2, SSL, and/or SNMPv3
- **USB Secure Autorun (requires HP ProCurve Manager Plus):** deploys, diagnoses, and updates switch using USB flash drive; works with secure credential to prevent tampering
- **Switch CPU protection:** provides automatic protection against malicious network traffic trying to shut down the switch
- **ICMP throttling:** defeats ICMP denial-of-service attacks by enabling any switch port to automatically throttle ICMP traffic

- **Identity-driven ACL:** enables implementation of a highly granular and flexible access security policy and VLAN assignment specific to each authenticated network user
- **STP BPDU port protection:** blocks Bridge Protocol Data Units (BPDUs) on ports that do not require BPDUs, preventing forged BPDU attacks
- **Dynamic IP lockdown:** works with DHCP protection to block traffic from unauthorized hosts, preventing IP source address spoofing
- **Dynamic ARP protection:** blocks ARP broadcasts from unauthorized hosts, preventing eavesdropping or theft of network data
- **STP Root Guard:** protects root bridge from malicious attack or configuration mistakes
- **Detection of malicious attacks:** monitors 10 types of network traffic and sends a warning when an anomaly that potentially can be caused by malicious attacks is detected
- **Port security:** allows access only to specified MAC addresses, which can be learned or specified by the administrator
- **MAC address lockout:** prevents particular configured MAC addresses from connecting to the network
- **Source-port filtering:** allows only specified ports to communicate with each other
- **RADIUS/TACACS+:** eases switch management security administration by using a password authentication server
- **Secure Shell (SSHv2):** encrypts all transmitted data for secure, remote command-line interface (CLI) access over IP networks
- **Secure Sockets Layer (SSL):** encrypts all HTTP traffic, allowing secure access to the browser-based management GUI in the switch
- **Secure FTP:** allows secure file transfer to and from the switch; protects against unwanted file downloads or unauthorized copying of switch configuration file
- **Management Interface Wizard:** helps ensure that management interfaces such as SNMP, telnet, SSH, SSL, Web, and USB are secured to desired level
- **Switch management logon security:** can require either RADIUS or TACACS+ authentication for secure switch CLI logon
- **Security banner:** displays a customized security policy when users log in to the switch

Convergence

- **IP multicast routing (requires Premium License):** includes PIM Sparse and Dense modes to route IP multicast traffic
- **IP multicast snooping (data-driven IGMP):** automatically prevents flooding of IP multicast traffic
- **LLDP-MED (Media Endpoint Discovery):** a standard extension of LLDP that stores values for parameters such as QoS and VLAN to automatically configure network devices such as IP phones
- **RADIUS VLAN for voice:** uses standard RADIUS attribute and LLDP-MED to automatically configure VLAN for IP phones
- **PoE allocations:** supports multiple methods (automatic, IEEE 802.3af class, LLDP-MED, or user specified) to allocate PoE power for more efficient energy savings

Quality of Service (QoS)

- **Advanced classifier-based QoS:** classifies traffic using multiple match criteria based on L2/3/4 information; applies QoS policies such as setting priority level and rate limit to selected traffic per port or per VLAN
- **Layer 4 prioritization:** enables prioritization based on TCP/UDP port numbers
- **Traffic prioritization:** allows real-time traffic classification into eight priority levels mapped to eight queues
- **Bandwidth shaping:**
 - **Port-based rate limiting:** provides per-port ingress/egress enforced maximum bandwidth
 - **Classifier-based rate limiting:** uses ACL to enforce maximum bandwidth for ingress traffic on each port
 - **Guaranteed minimum:** provides per-port, per-queue egress-based guaranteed minimum bandwidth
- **Class of Service (CoS):** sets the IEEE 802.1p priority tag based on IP address, IP Type of Service (ToS), L3 protocol, TCP/UDP port number, source port, and DiffServ

Warranty and support

- **ProCurve Lifetime Warranty:** for as long as you own the product, with next-business-day advance replacement (available in most countries)

- **Electronic and telephone support:** limited electronic and telephone support is available from HP; refer to the HP website at www.procurve.com/support for details on the support provided and the period during which support is available
- **Software releases:** refer to the HP website at www.procurve.com/support for details on the software releases provided and the period during which software releases are available

HP ProCurve Switch 3500 Series

Specifications



HP ProCurve Switch 3500yl-24G-PWR Intelligent Edge (J8692A)



HP ProCurve 3500yl-24G-PoE+ Switch (J9310A)



HP ProCurve Switch 3500yl-48G-PWR Intelligent Edge (J8693A)

Ports	1 open module slot 20 auto-sensing 10/100/1000 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX, IEEE 802.3ab Type 1000Base-T); Media Type: Auto-MDIX; Duplex: 10Base-T/100Base-TX: half or full; 1000Base-T: full only 1 RS-232C DB-9 console port 4 dual-personality ports; each port can be used as either an RJ-45 10/100/1000 port (IEEE 802.3 Type 10Base-T; IEEE 802.3u Type 100Base-TX; IEEE 802.3ab 1000Base-T Gigabit Ethernet) with PoE or an open mini-GBIC slot (for use with mini-GBIC transceivers) Supports a maximum of 4 10-GbE ports	1 open module slot 20 auto-sensing 10/100/1000 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX, IEEE 802.3ab Type 1000Base-T); Media Type: Auto-MDIX; Duplex: 10Base-T/100Base-TX: half or full; 1000Base-T: full only 1 RJ-45 serial console port 4 dual-personality ports; each port can be used as either an RJ-45 10/100/1000 port (IEEE 802.3 Type 10Base-T; IEEE 802.3u Type 100Base-TX; IEEE 802.3ab 1000Base-T Gigabit Ethernet) with PoE or an open mini-GBIC slot (for use with mini-GBIC transceivers) Supports a maximum of 4 10-GbE ports	1 open module slot 44 auto-sensing 10/100/1000 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX, IEEE 802.3ab Type 1000Base-T); Media Type: Auto-MDIX; Duplex: 10Base-T/100Base-TX: half or full; 1000Base-T: full only 1 RS-232C DB-9 console port 4 dual-personality ports; each port can be used as either an RJ-45 10/100/1000 port (IEEE 802.3 Type 10Base-T; IEEE 802.3u Type 100Base-TX; IEEE 802.3ab 1000Base-T Gigabit Ethernet) with PoE or an open mini-GBIC slot (for use with mini-GBIC transceivers) Supports a maximum of 4 10-GbE ports
Physical characteristics			
Dimensions	15.43(d) x 17.44(w) x 1.73(h) in. (39.2 x 44.3 x 4.4 cm) (1U height)	15.43(d) x 17.44(w) x 1.73(h) in. (39.2 x 44.3 x 4.4 cm) (1U height)	16.93(d) x 17.44(w) x 1.73(h) in. (43.0 x 44.3 x 4.4 cm) (1U height)
Weight	14.11 lb. (6.4 kg)	13.86 lb. (6.29 kg)	16.09 lb. (7.3 kg)
Memory and processor			
10G Module	ARM9 @ 200 MHz; packet buffer size: 36 Mb QDR SDRAM	ARM9 @ 200 MHz; packet buffer size: 36 Mb QDR SDRAM	ARM9 @ 200 MHz; packet buffer size: 36 Mb QDR SDRAM
Management Module	Stackable memory and processor: Freescale PowerPC 8540 @ 666 MHz, 4 MB flash, 128 MB compact flash, 256 MB DDR SDRAM	Stackable memory and processor: Freescale PowerPC 8540 @ 666 MHz, 4 MB flash, 128 MB compact flash, 256 MB DDR SDRAM	Stackable memory and processor: Freescale PowerPC 8540 @ 666 MHz, 4 MB flash Mb, 128 MB compact flash, 256 MB DDR SDRAM
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only
Performance			
1000 Mb Latency	< 3.4 μ s (FIFO 64-byte packets)	< 3.4 μ s (FIFO 64-byte packets)	< 3.4 μ s (FIFO 64-byte packets)
10 Gbps Latency	< 2.1 μ s (FIFO 64-byte packets)	< 2.1 μ s (FIFO 64-byte packets)	< 2.1 μ s (FIFO 64-byte packets)
Throughput	up to 75.7 million pps	up to 75.7 million pps	up to 111.5 million pps
Routing/Switching capacity	101.8 Gbps	101.8 Gbps	149.8 Gbps
Switch fabric speed	105.6 Gbps	105.6 Gbps	153.6 Gbps
Routing table size	10,000 entries	10,000 entries	10,000 entries
MAC address table size	64,000 entries	64,000 entries	64,000 entries
Environment			
Operating temperature	32°F to 131°F (0°C to 55°C); 32°F to 104°F (40°C) when used with any X2 10-GbE	32°F to 131°F (0°C to 55°C); 32°F to 104°F (40°C) when used with any X2 10-GbE	32°F to 131°F (0°C to 55°C); 32°F to 104°F (40°C) when used with any X2 10-GbE
Operating relative humidity	15% to 95% @ 104°F (40°C), non-condensing	15% to 95% @ 104°F (40°C), non-condensing	15% to 95% @ 104°F (40°C), non-condensing
Non-operating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)
Non-operating/Storage relative humidity	15% to 90% @ 149°F (65°C), non-condensing	15% to 90% @ 149°F (65°C), non-condensing	15% to 95% @ 149°F (65°C), non-condensing
Altitude	up to 15,000 ft. (4.6 km)	up to 15,000 ft. (4.6 km)	up to 15,000 ft. (4.6 km)
Acoustic	Power: 55.1 dB, Pressure: 44.8 dB ISO 7779, ISO 9296	Power: 57.0 dB, Pressure: 40.5 dB ISO 7779, ISO 9296	Power: 55.6 dB, Pressure: 45.3 dB ISO 7779, ISO 9296
Electrical characteristics			Achieved Miercom Certified Green Award
Description	The switch automatically adjusts to any voltage between 100-127 and 200-240 volts and either 50 or 60 Hz	The switch automatically adjusts to any voltage between 100-127 and 200-240 volts and either 50 or 60 Hz	The switch automatically adjusts to any voltage between 100-127 and 200-240 volts with either 50 or 60 Hz
Maximum heat dissipation	865 BTU/hr (912.9 kJ/hr)	865 BTU/hr (912.9 kJ/hr)	1144 BTU/hr (1206.9 kJ/hr)
Voltage	100-127 / 200-240 VAC	100-127 / 200-240 VAC	100-127 / 200-240 VAC
Current	10.0 / 5.0 A	6.6 / 3.0 A	10.0 / 5.0 A
Idle power	98 W	94 W	142 W
Maximum power rating	623 W	616 W	705 W
PoE power	398 W	398 W	398 W
Frequency	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz

HP ProCurve Switch 3500 Series

Specifications (continued)

	HP ProCurve Switch 3500yl-24G-PWR Intelligent Edge (J8692A)	HP ProCurve 3500yl-24G-PoE+ Switch (J9310A)	HP ProCurve Switch 3500yl-48G-PWR Intelligent Edge (J8693A)
Notes	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. The amount of PoE power delivered is dependent on the number and type of power supplies connected. The switches offer optional external power supplies (EPS) for maximum PoE power.	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. The amount of PoE power delivered is dependent on the number and type of power supplies connected. The switches offer optional external power supplies (EPS) for maximum PoE power.	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. The amount of PoE power delivered is dependent on the number and type of power supplies connected. The switches offer optional external power supplies (EPS) for maximum PoE power.
Safety	CSA 22.2 No. 60950; UL 60950; IEC 60950; EN 60950	CSA 22.2 No. 60950; UL 60950; IEC 60950; EN 60950	CSA 22.2 No. 60950; UL 60950; IEC 60950; EN 60950
Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A
Immunity			
EN	EN 55024, CISPR 24	EN 55024, CISPR 24	EN 55024, CISPR 24
ESD	IEC 61000-4-2; 4 kV CD, 8 kV AD	IEC 61000-4-2; 4 kV CD, 8 kV AD	IEC 61000-4-2; 4 kV CD, 8 kV AD
Radiated	IEC 61000-4-3; 3 V/m	IEC 61000-4-3; 3 V/m	IEC 61000-4-3; 3 V/m
EFT/Burst	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)
Surge	IEC 61000-4-5; 1 kV/2 kV AC	IEC 61000-4-5; 1 kV/2 kV AC	IEC 61000-4-5; 1 kV/2 kV AC
Conducted	IEC 61000-4-6; 3 V	IEC 61000-4-6; 3 V	IEC 61000-4-6; 3 V
Power frequency magnetic field	IEC 61000-4-8; 1 A/m, 50 or 60 Hz	IEC 61000-4-8; 1 A/m, 50 or 60 Hz	IEC 61000-4-8; 1 A/m, 50 or 60 Hz
Voltage dips and interruptions	IEC 61000-4-11; >95% reduction, 0.5 period; 30% reduction, 25 periods	IEC 61000-4-11; >95% reduction, 0.5 period; 30% reduction, 25 periods	IEC 61000-4-11; >95% reduction, 0.5 period; 30% reduction, 25 periods
Harmonics	EN 61000-3-2, IEC 61000-3-2	EN 61000-3-2, IEC 61000-3-2	EN 61000-3-2, IEC 61000-3-2
Flicker	EN 61000-3-3, IEC 61000-3-3	EN 61000-3-3, IEC 61000-3-3	EN 61000-3-3, IEC 61000-3-3
Management	HP ProCurve Manager Plus; HP ProCurve Manager (included); command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)	HP ProCurve Manager Plus; HP ProCurve Manager (included); command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)	HP ProCurve Manager Plus; HP ProCurve Manager (included); command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)
Notes	When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required.	When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required.	When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required.
Services	3-year, 4-hour onsite, 13x5 coverage for hardware (U2855E) 3-year, 4-hour onsite, 24x7 coverage for hardware (U2856E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (U6304E) 3-year, 24x7 SW phone support, software updates (UE262E) Installation with minimum configuration, system-based pricing (U4826E) Installation with HP-provided configuration, system-based pricing (U4830E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UR868E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR869E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR870E) 4-year, 24x7 SW phone support, software updates (UR871E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UR872E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UR873E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR874E) 5-year, 24x7 SW phone support, software updates (UR875E) Refer to the HP website at www.procurve.com/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	Refer to the HP website at www.procurve.com/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	3-year, 4-hour onsite, 13x5 coverage for hardware (H4496E) 3-year, 4-hour onsite, 24x7 coverage for hardware (H2893E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (U6319E) 3-year, 24x7 SW phone support, software updates (UE264E) Installation with minimum configuration, system-based pricing (U4826E) Installation with HP-provided configuration, system-based pricing (U4830E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UR884E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR885E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR886E) 4-year, 24x7 SW phone support, software updates (UR887E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UR888E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UR889E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR890E) 5-year, 24x7 SW phone support, software updates (UR891E) Refer to the HP website at www.procurve.com/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

Specifications (continued)

	HP ProCurve Switch 3500yl-24G-PWR Intelligent Edge (J8692A)	HP ProCurve 3500yl-24G-PoE+ Switch (J9310A)	HP ProCurve Switch 3500yl-48G-PWR Intelligent Edge (J8693A)
Standards and protocols (applies to all products in series)	Device management RFC 1591 DNS (client) HTML and telnet management General protocols IEEE 802.1ad Q-in-Q (Premium License) IEEE 802.1D MAC Bridges IEEE 802.1p Priority IEEE 802.1Q VLANs IEEE 802.1s Multiple Spanning Trees IEEE 802.1v VLAN classification by Protocol and Port IEEE 802.1w Rapid Reconfiguration of Spanning Tree IEEE 802.3ad Link Aggregation Control Protocol (LACP) IEEE 802.3af Power over Ethernet IEEE 802.3x Flow Control RFC 768 UDP RFC 783 TFTP Protocol (revision 2) RFC 792 ICMP RFC 793 TCP UDLD (Uni-directional Link Detection) RFC 826 ARP RFC 854 TELNET RFC 868 Time Protocol RFC 951 BOOTP RFC 1058 RIPv1 RFC 1350 TFTP Protocol (revision 2) RFC 1519 CIDR RFC 1542 BOOTP Extensions RFC 2030 Simple Network Time Protocol (SNTP) v4 RFC 2131 DHCP RFC 2453 RIPv2 RFC 2548 (MS-RAS-Vendor only) RFC 3046 DHCP Relay Agent Information Option RFC 3576 Ext to RADIUS (CoA only) RFC 3768 VRRP (Premium License) RFC 4675 RADIUS VLAN & Priority	IP multicast RFC 3376 IGMPv3 (host joins only) RFC 3973 Draft 2 PIM Dense Mode (Premium License) RFC 4601 Draft 10 PIM Sparse Mode (Premium License) IPv6 RFC 1981 IPv6 Path MTU Discovery RFC 2460 IPv6 Specification RFC 2710 Multicast Listener Discovery (MLD) for IPv6 RFC 2925 Remote Operations MIB (Ping only) RFC 3019 MLDv1 MIB RFC 3315 DHCPv6 (client only) RFC 3513 IPv6 Addressing Architecture RFC 3596 DNS Extension for IPv6 RFC 3810 MLDv2 (host joins only) RFC 4022 MIB for TCP RFC 4113 MIB for UDP RFC 4251 SSHv6 Architecture RFC 4252 SSHv6 Authentication RFC 4253 SSHv6 Transport Layer RFC 4254 SSHv6 Connection RFC 4293 MIB for IP RFC 4419 Key Exchange for SSH RFC 4443 ICMPv6 RFC 4541 IGMP & MLD Snooping Switch RFC 4861 IPv6 Neighbor Discovery RFC 4862 IPv6 Stateless Address Auto-configuration MIBs RFC 1213 MIB II RFC 1493 Bridge MIB RFC 1724 RIPv2 MIB RFC 1850 OSPFv2 MIB RFC 2021 RMONv2 MIB RFC 2096 IP Forwarding Table MIB	RFC 2613 SMON MIB RFC 2618 RADIUS Client MIB RFC 2620 RADIUS Accounting MIB RFC 2665 Ethernet-Like-MIB RFC 2668 802.3 MAU MIB RFC 2674 802.1p and IEEE 802.1Q Bridge MIB RFC 2737 Entity MIB (Version 2) RFC 2787 VRRP MIB RFC 2863 The Interfaces Group MIB RFC 2925 Ping MIB Network management IEEE 802.1AB Link Layer Discovery Protocol (LLDP) RFC 2819 Four groups of RMON: 1 (statistics), 2 (history), 3 (alarm) and 9 (events) RFC 3176 sFlow ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED) SNMPv1/v2c/v3 XRMON OSPF RFC 2328 OSPFv2 (Premium License) RFC 3101 OSPF NSSA QoS/Cos RFC 2474 DiffServ Precedence, including 8 queues/port RFC 2597 DiffServ Assured Forwarding (AF) RFC 2598 DiffServ Expedited Forwarding (EF) Security IEEE 802.1X Port Based Network Access Control RFC 1492 TACACS+ RFC 2865 RADIUS (client only) RFC 2866 RADIUS Accounting Secure Sockets Layer (SSL) SSHv1/SSHv2 Secure Shell

HP ProCurve Switch 3500 Series

Specifications



HP ProCurve 3500yl-48G-PoE+ Switch (J9311A)



HP ProCurve 3500-24 Switch (J9470A)



HP ProCurve 3500-24-PoE Switch (J9471A)

Ports	1 open module slot 44 auto-sensing 10/100/1000 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX, IEEE 802.3ab Type 1000Base-T); Media Type: Auto-MDIX; Duplex: 10Base-T/100Base-TX: half or full; 1000Base-T: full only 1 RJ-45 serial console port 4 dual-personality ports; each port can be used as either an RJ-45 10/100/1000 port (IEEE 802.3 Type 10Base-T; IEEE 802.3u Type 100Base-TX; IEEE 802.3ab 1000Base-T Gigabit Ethernet) with PoE or an open mini-GBIC slot (for use with mini-GBIC transceivers) Supports a maximum of 4 10-GbE ports	20 RJ-45 auto-sensing 10/100 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX); Media Type: Auto-MDIX; Duplex: half or full 4 dual-personality ports; Each port can be used as either an RJ-45 10/100/1000 port (IEEE 802.3 Type 10Base-T; IEEE 802.3u Type 100Base-TX; IEEE 802.3ab 1000Base-T Gigabit Ethernet) or an open mini-GBIC slot (for use with mini-GBIC transceivers) 1 RS-232C DB-9 console port	20 RJ-45 auto-sensing 10/100 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX); Media Type: Auto-MDIX; Duplex: half or full 4 dual-personality ports; each port can be used as either an RJ-45 10/100/1000 port (IEEE 802.3 Type 10Base-T; IEEE 802.3u Type 100Base-TX; IEEE 802.3ab 1000Base-T Gigabit Ethernet) with PoE or an open mini-GBIC slot (for use with mini-GBIC transceivers) 1 RS-232C DB-9 console port
Physical characteristics			
Dimensions	16.93(d) x 17.44(w) x 1.73(h) in. (43.0 x 44.3 x 4.4 cm) (1U height)	15.43(d) x 17.44(w) x 1.73(h) in. (39.2 x 44.3 x 4.4 cm) (1U height)	15.43(d) x 17.44(w) x 1.73(h) in. (39.2 x 44.3 x 4.4 cm) (1U height)
Weight	15.54 lb. (7.05 kg)	11.9 lb. (5.4 kg)	13.23 lb. (6 kg)
Memory and processor			
10G Module	ARM9 @ 200 MHz; packet buffer size: 36 Mb QDR SDRAM		
Management Module	Stackable memory and processor: Freescale PowerPC 8540 @ 666 MHz, 4 MB flash Mb, 128 MB compact flash, 256 MB DDR SDRAM	Stackable memory and processor: Freescale PowerPC 8540 @ 666 MHz, 4 MB flash, 128 MB compact flash, 256 MB DDR SDRAM	Stackable memory and processor: Freescale PowerPC 8540 @ 666 MHz, 4 MB flash, 128 MB compact flash, 256 MB DDR SDRAM
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only
Performance			
100 Mb Latency		< 3.4 μ s (LIFO 64-byte packets)	< 3.4 μ s (LIFO 64-byte packets)
1000 Mb Latency	< 3.4 μ s (FIFO 64-byte packets)	< 2.9 μ s (LIFO 64-byte packets)	< 2.9 μ s (LIFO 64-byte packets)
10 Gbps Latency	< 2.1 μ s (FIFO 64-byte packets)		
Throughput	up to 111.5 million pps	up to 8.9 million pps (64-byte packets)	up to 8.9 million pps (64-byte packets)
Routing/Switching capacity	149.8 Gbps	12 Gbps	12 Gbps
Switch fabric speed	153.6 Gbps		
Routing table size	10,000 entries	10,000 entries	10,000 entries
MAC address table size	64,000 entries	64,000 entries	64,000 entries
Environment			
Operating temperature	32°F to 131°F (0°C to 55°C); 32°F to 104°F (40°C) when used with any SFP+ 10-GbE	32°F to 131°F (0°C to 55°C)	32°F to 131°F (0°C to 55°C)
Operating relative humidity	15% to 95% @ 104°F (40°C), non-condensing	15% to 95% @ 104°F (40°C), non-condensing	15% to 95% @ 104°F (40°C), non-condensing
Non-operating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)
Non-operating/Storage relative humidity	15% to 95% @ 149°F (65°C), non-condensing	15% to 90% @ 149°F (65°C), non-condensing	15% to 90% @ 149°F (65°C), non-condensing
Altitude	up to 15,000 ft. (4.6 km)	up to 15,000 ft. (4.6 km)	up to 15,000 ft. (4.6 km)
Acoustic	Power: 58.0 dB, Pressure: 42.0 dB ISO 7779, ISO 9296	Power: 53.1 dB, Pressure: 42.6 dB ISO 7779, ISO 9296	Power: 55.1 dB, Pressure: 44.8 dB ISO 7779, ISO 9296
Electrical characteristics			
Description	The switch automatically adjusts to any voltage between 100-127 and 200-240 volts with either 50 or 60 Hz	The switch automatically adjusts to any voltage between 100-127 and 200-240 volts and either 50 or 60 Hz	The switch automatically adjusts to any voltage between 100-127 and 200-240 volts and either 50 or 60 Hz
Maximum heat dissipation	1144 BTU/hr (1206.9 kJ/hr)	268 BTU/hr (282.8 kJ/hr)	435 BTU/hr (458.92 kJ/hr)
Voltage	100-127 / 200-240 VAC	100-127 / 200-240 VAC	100-127 / 200-240 VAC
Current	7.3 / 3.3 A	1.1 / 0.6 A	6.6 / 3.0 A
Idle power	132 W	68.2 W	91 W
Maximum power rating	638 W	78.7 W	497 W
PoE power	398 W		398 W
Frequency	50 / 60 Hz	50 / 60 Hz	50 / 60 Hz

HP ProCurve Switch 3500 Series

Specifications (continued)

	HP ProCurve 3500yl-48G-PoE+ Switch (J9311A)	HP ProCurve 3500-24 Switch (J9470A)	HP ProCurve 3500-24-PoE Switch (J9471A)
Notes	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. The amount of PoE power delivered is dependent on the number and type of power supplies connected. The switches offer optional external power supplies (EPS) for maximum PoE power.	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. The amount of PoE power delivered is dependent on the number and type of power supplies connected. The switches offer optional external power supplies (EPS) for maximum PoE power.
Safety	CSA 22.2 No. 60950; UL 60950; IEC 60950; EN 60950	CSA 22.2 No. 60950; UL 60950; IEC 60950; EN 60950	EN 60950/IEC 60950; CAN/CSA 22.2 No. 60950; EN 60825; UL 60950
Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A
Immunity			
EN	EN 55024, CISPR 24	EN 55024, CISPR 24	EN 55024, CISPR 24
ESD	IEC 61000-4-2; 4 kV CD, 8 kV AD	IEC 61000-4-2; 4 kV CD, 8 kV AD	IEC 61000-4-2; 4 kV CD, 8 kV AD
Radiated	IEC 61000-4-3; 3 V/m	IEC 61000-4-3; 3 V/m	IEC 61000-4-3; 3 V/m
EFT/Burst	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)
Surge	IEC 61000-4-5; 1 kV/2 kV AC	IEC 61000-4-5; 1 kV/2 kV AC	IEC 61000-4-5; 1 kV/2 kV AC
Conducted	IEC 61000-4-6; 3 V	IEC 61000-4-6; 3 V	IEC 61000-4-6; 3 V
Power frequency magnetic field	IEC 61000-4-8; 1 A/m, 50 or 60 Hz	IEC 61000-4-8; 1 A/m, 50 or 60 Hz	IEC 61000-4-8; 1 A/m, 50 or 60 Hz
Voltage dips and interruptions	IEC 61000-4-11; >95% reduction, 0.5 period; 30% reduction, 25 periods	IEC 61000-4-11; >95% reduction, 0.5 period; 30% reduction, 25 periods	IEC 61000-4-11; >95% reduction, 0.5 period; 30% reduction, 25 periods
Harmonics	EN 61000-3-2, IEC 61000-3-2	EN 61000-3-2, IEC 61000-3-2	EN 61000-3-2, IEC 61000-3-2
Flicker	EN 61000-3-3, IEC 61000-3-3	EN 61000-3-3, IEC 61000-3-3	EN 61000-3-3, IEC 61000-3-3
Management	HP ProCurve Manager Plus; HP ProCurve Manager (included); command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)	HP ProCurve Manager Plus; HP ProCurve Manager (included); command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)	HP ProCurve Manager Plus; HP ProCurve Manager (included); command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)
Notes	When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required.	When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required.	When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required.
Services	Refer to the HP website at www.procurve.com/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	3-year, 4-hour onsite, 13x5 coverage for hardware (U2855E) 3-year, 4-hour onsite, 24x7 coverage for hardware (U2856E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (U6304E) 3-year, 24x7 SW phone support, software updates (UE262E) Installation with minimum configuration, system-based pricing (U4826E) Installation with HP-provided configuration, system-based pricing (U4830E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UR868E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR869E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR870E) 4-year, 24x7 SW phone support, software updates (UR871E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UR872E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UR873E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR874E) 5-year, 24x7 SW phone support, software updates (UR875E) Refer to the HP website at www.procurve.com/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.	3-year, 4-hour onsite, 13x5 coverage for hardware (U2855E) 3-year, 4-hour onsite, 24x7 coverage for hardware (U2856E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (U6304E) 3-year, 24x7 SW phone support, software updates (UE262E) Installation with minimum configuration, system-based pricing (U4826E) Installation with HP-provided configuration, system-based pricing (U4830E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UR868E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR869E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR870E) 4-year, 24x7 SW phone support, software updates (UR871E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UR872E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UR873E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR874E) 5-year, 24x7 SW phone support, software updates (UR875E) Refer to the HP website at www.procurve.com/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.

Specifications (continued)

	HP ProCurve 3500yl-48G-PoE+ Switch (J9311A)	HP ProCurve 3500-24 Switch (J9470A)	HP ProCurve 3500-24-PoE Switch (J9471A)
Standards and protocols (applies to all products in series)	Device management RFC 1591 DNS (client) HTML and telnet management General protocols IEEE 802.1ad Q-in-Q (Premium License) IEEE 802.1D MAC Bridges IEEE 802.1p Priority IEEE 802.1Q VLANs IEEE 802.1s Multiple Spanning Trees IEEE 802.1v VLAN classification by Protocol and Port IEEE 802.1w Rapid Reconfiguration of Spanning Tree IEEE 802.3ad Link Aggregation Control Protocol (LACP) IEEE 802.3af Power over Ethernet IEEE 802.3x Flow Control RFC 768 UDP RFC 783 TFTP Protocol (revision 2) RFC 792 ICMP RFC 793 TCP UDLD (Uni-directional Link Detection) RFC 826 ARP RFC 854 TELNET RFC 868 Time Protocol RFC 951 BOOTP RFC 1058 RIPv1 RFC 1350 TFTP Protocol (revision 2) RFC 1519 CIDR RFC 1542 BOOTP Extensions RFC 2030 Simple Network Time Protocol (SNTP) v4 RFC 2131 DHCP RFC 2453 RIPv2 RFC 2548 (MS-RAS-Vendor only) RFC 3046 DHCP Relay Agent Information Option RFC 3576 Ext to RADIUS (CoA only) RFC 3768 VRRP (Premium License) RFC 4675 RADIUS VLAN & Priority	IP multicast RFC 3376 IGMPv3 (host joins only) RFC 3973 Draft 2 PIM Dense Mode (Premium License) RFC 4601 Draft 10 PIM Sparse Mode (Premium License) IPv6 RFC 1981 IPv6 Path MTU Discovery RFC 2460 IPv6 Specification RFC 2710 Multicast Listener Discovery (MLD) for IPv6 RFC 2925 Remote Operations MIB (Ping only) RFC 3019 MLDv1 MIB RFC 3315 DHCPv6 (client only) RFC 3513 IPv6 Addressing Architecture RFC 3596 DNS Extension for IPv6 RFC 3810 MLDv2 (host joins only) RFC 4022 MIB for TCP RFC 4113 MIB for UDP RFC 4251 SSHv6 Architecture RFC 4252 SSHv6 Authentication RFC 4253 SSHv6 Transport Layer RFC 4254 SSHv6 Connection RFC 4293 MIB for IP RFC 4419 Key Exchange for SSH RFC 4443 ICMPv6 RFC 4541 IGMP & MLD Snooping Switch RFC 4861 IPv6 Neighbor Discovery RFC 4862 IPv6 Stateless Address Auto-configuration MIBs RFC 1213 MIB II RFC 1493 Bridge MIB RFC 1724 RIPv2 MIB RFC 1850 OSPFv2 MIB RFC 2021 RMONv2 MIB RFC 2096 IP Forwarding Table MIB	RFC 2613 SMON MIB RFC 2618 RADIUS Client MIB RFC 2620 RADIUS Accounting MIB RFC 2665 Ethernet-Like-MIB RFC 2668 802.3 MAU MIB RFC 2674 802.1p and IEEE 802.1Q Bridge MIB RFC 2737 Entity MIB (Version 2) RFC 2787 VRRP MIB RFC 2863 The Interfaces Group MIB RFC 2925 Ping MIB Network management IEEE 802.1AB Link Layer Discovery Protocol (LLDP) RFC 2819 Four groups of RMON: 1 (statistics), 2 (history), 3 (alarm) and 9 (events) RFC 3176 sFlow ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED) SNMPv1/v2c/v3 XRMON OSPF RFC 2328 OSPFv2 (Premium License) RFC 3101 OSPF NSSA QoS/Cos RFC 2474 DiffServ Precedence, including 8 queues/port RFC 2597 DiffServ Assured Forwarding (AF) RFC 2598 DiffServ Expedited Forwarding (EF) Security IEEE 802.1X Port Based Network Access Control RFC 1492 TACACS+ RFC 2865 RADIUS (client only) RFC 2866 RADIUS Accounting Secure Sockets Layer (SSL) SSHv1/SSHv2 Secure Shell

HP ProCurve Switch 3500 Series

Specifications



HP ProCurve 3500-48 Switch (J9472A)



HP ProCurve 3500-48-PoE Switch (J9473A)

Ports	44 RJ-45 auto-sensing 10/100 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX); Media Type: Auto-MDIX; Duplex: half or full 4 dual-personality ports; each port can be used as either an RJ-45 10/100/1000 port (IEEE 802.3 Type 10Base-T; IEEE 802.3u Type 100Base-TX; IEEE 802.3ab 1000Base-T Gigabit Ethernet) with PoE or an open mini-GBIC slot (for use with mini-GBIC transceivers) 1 RS-232C DB-9 console port	44 RJ-45 auto-sensing 10/100 ports (IEEE 802.3 Type 10Base-T, IEEE 802.3u Type 100Base-TX); Media Type: Auto-MDIX; Duplex: half or full 4 dual-personality ports; each port can be used as either an RJ-45 10/100/1000 port (IEEE 802.3 Type 10Base-T; IEEE 802.3u Type 100Base-TX; IEEE 802.3ab 1000Base-T Gigabit Ethernet) with PoE or an open mini-GBIC slot (for use with mini-GBIC transceivers) 1 RS-232C DB-9 console port
Physical characteristics		
Dimensions	16.93(d) x 17.44(w) x 1.73(h) in. (43.0 x 44.3 x 4.4 cm) (1U height)	16.93(d) x 17.44(w) x 1.73(h) in. (43.0 x 44.3 x 4.4 cm) (1U height)
Weight	13.45 lb. (6.1 kg)	14.99 lb. (6.8 kg)
Memory and processor		
Management Module	Stackable memory and processor: Freescale PowerPC 8540 @ 666 MHz, 4 MB flash Mb, 128 MB compact flash, 256 MB DDR SDRAM	Stackable memory and processor: Freescale PowerPC 8540 @ 666 MHz, 4 MB flash Mb, 128 MB compact flash, 256 MB DDR SDRAM
Mounting	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only	Mounts in an EIA-standard 19 in. telco rack or equipment cabinet (hardware included); horizontal surface mounting only
Performance		
100 Mb Latency	< 3.4 μ s (LIFO 64-byte packets)	< 3.4 μ s (LIFO 64-byte packets)
1000 Mb Latency	< 2.9 μ s (LIFO 64-byte packets)	< 2.9 μ s (LIFO 64-byte packets)
Throughput	up to 12.5 million pps (64-byte packets)	up to 12.5 million pps (64-byte packets)
Routing/Switching capacity	16.8 Gbps	16.8 Gbps
Routing table size	10,000 entries	10,000 entries
MAC address table size	64,000 entries	64,000 entries
Environment		
Operating temperature	32°F to 131°F (0°C to 55°C)	32°F to 131°F (0°C to 55°C)
Operating relative humidity	15% to 95% @ 104°F (40°C), non-condensing	15% to 95% @ 104°F (40°C), non-condensing
Non-operating/Storage temperature	-40°F to 158°F (-40°C to 70°C)	-40°F to 158°F (-40°C to 70°C)
Non-operating/Storage relative humidity	15% to 95% @ 149°F (65°C), non-condensing	15% to 95% @ 149°F (65°C), non-condensing
Altitude	up to 15,000 ft. (4.6 km)	up to 15,000 ft. (4.6 km)
Acoustic	Power: 55.8 dB, Pressure: 43.5 dB ISO 7779, ISO 9296	Power: 55.6 dB, Pressure: 45.3 dB ISO 7779, ISO 9296
Electrical characteristics		
Description	The switch automatically adjusts to any voltage between 100-127 and 200-240 volts with either 50 or 60 Hz	The switch automatically adjusts to any voltage between 100-127 and 200-240 volts with either 50 or 60 Hz
Maximum heat dissipation	465 BTU/hr (490.58 kJ/hr)	611 BTU/hr (644.6 kJ/hr)
Voltage	100-127 / 200-240 VAC	100-127 / 200-240 VAC
Current	1.6 / 0.8 A	7.3 / 3.3 A
Idle power	96 W	133.2 W
Maximum power rating	136.2 W	548.8 W
PoE power		398 W
Frequency	50 / 60 Hz	50 / 60 Hz
Notes	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated.	Idle power is the actual power consumption of the device with no ports connected. Maximum power rating and maximum heat dissipation are the worst-case theoretical maximum numbers provided for planning the infrastructure with fully loaded PoE (if equipped), 100% traffic, all ports plugged in, and all modules populated. The amount of PoE power delivered is dependent on the number and type of power supplies connected. The switches offer optional external power supplies (EPS) for maximum PoE power.
Safety	EN 60950/IEC 60950; CAN/CSA 22.2 No. 60950; UL 60950; IEC 60950	EN 60950/IEC 60950; CAN/CSA 22.2 No. 60950; UL 60950; IEC 60950
Emissions	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A	FCC Class A; VCCI Class A; EN 55022/CISPR 22 Class A
Immunity		
EN	EN 55024, CISPR 24	EN 55024, CISPR 24
ESD	IEC 61000-4-2; 4 kV CD, 8 kV AD	IEC 61000-4-2; 4 kV CD, 8 kV AD
Radiated	IEC 61000-4-3; 3 V/m	IEC 61000-4-3; 3 V/m
EFT/Burst	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)	IEC 61000-4-4; 1.0 kV (power line), 0.5 kV (signal line)
Surge	IEC 61000-4-5; 1 kV/2 kV AC	IEC 61000-4-5; 1 kV/2 kV AC
Conducted	IEC 61000-4-6; 3 V	IEC 61000-4-6; 3 V
Power frequency magnetic field	IEC 61000-4-8; 1 A/m, 50 or 60 Hz	IEC 61000-4-8; 1 A/m, 50 or 60 Hz
Voltage dips and interruptions	IEC 61000-4-11; >95% reduction, 0.5 period; 30% reduction, 25 periods	IEC 61000-4-11; >95% reduction, 0.5 period; 30% reduction, 25 periods
Harmonics	EN 61000-3-2, IEC 61000-3-2	EN 61000-3-2, IEC 61000-3-2
Flicker	EN 61000-3-3, IEC 61000-3-3	EN 61000-3-3, IEC 61000-3-3

HP ProCurve Switch 3500 Series

Specifications (continued)

HP ProCurve 3500-48 Switch (J9472A)		HP ProCurve 3500-48-PoE Switch (J9473A)	
Management	HP ProCurve Manager Plus; HP ProCurve Manager (included); command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)	HP ProCurve Manager Plus; HP ProCurve Manager (included); command-line interface; Web browser; configuration menu; out-of-band management (serial RS-232C)	
Notes	When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required.	When using mini-GBICs with this product, mini-GBICs with revision "B" or later (product number ends with the letter "B" or later, e.g., J4858B, J4859C) are required.	
Services	<p>3-year, 4-hour onsite, 13x5 coverage for hardware (H4496E) 3-year, 4-hour onsite, 24x7 coverage for hardware (H2893E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (U6319E) 3-year, 24x7 SW phone support, software updates (UE264E) Installation with minimum configuration, system-based pricing (U4826E) Installation with HP-provided configuration, system-based pricing (U4830E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UR884E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR885E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR886E) 4-year, 24x7 SW phone support, software updates (UR887E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UR888E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UR889E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR890E) 5-year, 24x7 SW phone support, software updates (UR891E)</p> <p>Refer to the HP website at www.procurve.com/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.</p>	<p>3-year, 4-hour onsite, 13x5 coverage for hardware (H4496E) 3-year, 4-hour onsite, 24x7 coverage for hardware (H2893E) 3-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone support (U6319E) 3-year, 24x7 SW phone support, software updates (UE264E) Installation with minimum configuration, system-based pricing (U4826E) Installation with HP-provided configuration, system-based pricing (U4830E) 4-year, 4-hour onsite, 13x5 coverage for hardware (UR884E) 4-year, 4-hour onsite, 24x7 coverage for hardware (UR885E) 4-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR886E) 4-year, 24x7 SW phone support, software updates (UR887E) 5-year, 4-hour onsite, 13x5 coverage for hardware (UR888E) 5-year, 4-hour onsite, 24x7 coverage for hardware (UR889E) 5-year, 4-hour onsite, 24x7 coverage for hardware, 24x7 software phone (UR890E) 5-year, 24x7 SW phone support, software updates (UR891E)</p> <p>Refer to the HP website at www.procurve.com/services for details on the service-level descriptions and product numbers. For details about services and response times in your area, please contact your local HP sales office.</p>	
Standards and protocols (applies to all products in series)	<p>Device management</p> <p>RFC 1591 DNS (client) HTML and telnet management</p> <p>General protocols</p> <p>IEEE 802.1ad Q-in-Q (Premium License) IEEE 802.1D MAC Bridges IEEE 802.1p Priority IEEE 802.1Q VLANs IEEE 802.1s Multiple Spanning Trees IEEE 802.1v VLAN classification by Protocol and Port IEEE 802.1w Rapid Reconfiguration of Spanning Tree IEEE 802.3ad Link Aggregation Control Protocol (LACP) IEEE 802.3af Power over Ethernet IEEE 802.3x Flow Control RFC 768 UDP RFC 783 TFTP Protocol (revision 2) RFC 792 ICMP RFC 793 TCP UDLD (Uni-directional Link Detection) RFC 826 ARP RFC 854 TELNET RFC 868 Time Protocol RFC 951 BOOTP RFC 1058 RIPv1 RFC 1350 TFTP Protocol (revision 2) RFC 1519 CIDR RFC 1542 BOOTP Extensions RFC 2030 Simple Network Time Protocol (SNTP) v4 RFC 2131 DHCP RFC 2453 RIPv2 RFC 2548 (MS-RAS-Vendor only) RFC 3046 DHCP Relay Agent Information Option RFC 3576 Ext to RADIUS (CoA only) RFC 3768 VRRP (Premium License) RFC 4675 RADIUS VLAN & Priority</p>	<p>IP multicast</p> <p>RFC 3376 IGMPv3 (host joins only) RFC 3973 Draft 2 PIM Dense Mode (Premium License) RFC 4601 Draft 10 PIM Sparse Mode (Premium License)</p> <p>IPv6</p> <p>RFC 1981 IPv6 Path MTU Discovery RFC 2460 IPv6 Specification RFC 2710 Multicast Listener Discovery (MLD) for IPv6 RFC 2925 Remote Operations MIB (Ping only) RFC 3019 MLDv1 MIB RFC 3315 DHCPv6 (client only) RFC 3513 IPv6 Addressing Architecture RFC 3596 DNS Extension for IPv6 RFC 3810 MLDv2 (host joins only) RFC 4022 MIB for TCP RFC 4113 MIB for UDP RFC 4251 SSHv6 Architecture RFC 4252 SSHv6 Authentication RFC 4253 SSHv6 Transport Layer RFC 4254 SSHv6 Connection RFC 4293 MIB for IP RFC 4419 Key Exchange for SSH RFC 4443 ICMPv6 RFC 4541 IGMP & MLD Snooping Switch RFC 4861 IPv6 Neighbor Discovery RFC 4862 IPv6 Stateless Address Auto-configuration</p> <p>MIBs</p> <p>RFC 1213 MIB II RFC 1493 Bridge MIB RFC 1724 RIPv2 MIB RFC 1850 OSPFv2 MIB RFC 2021 RMONv2 MIB RFC 2096 IP Forwarding Table MIB</p>	<p>RFC 2613 SMON MIB RFC 2618 RADIUS Client MIB RFC 2620 RADIUS Accounting MIB RFC 2665 Ethernet-Like-MIB RFC 2668 802.3 MAU MIB RFC 2674 802.1p and IEEE 802.1Q Bridge MIB RFC 2737 Entity MIB (Version 2) RFC 2787 VRRP MIB RFC 2863 The Interfaces Group MIB RFC 2925 Ping MIB</p> <p>Network management</p> <p>IEEE 802.1AB Link Layer Discovery Protocol (LLDP) RFC 2819 Four groups of RMON: 1 (statistics), 2 (history), 3 (alarm) and 9 (events) RFC 3176 sFlow ANSI/TIA-1057 LLDP Media Endpoint Discovery (LLDP-MED) SNMPv1/v2c/v3 XRMON</p> <p>OSPF</p> <p>RFC 2328 OSPFv2 (Premium License) RFC 3101 OSPF NSSA</p> <p>QoS/Cos</p> <p>RFC 2474 DiffServ Precedence, including 8 queues/port RFC 2597 DiffServ Assured Forwarding (AF) RFC 2598 DiffServ Expedited Forwarding (EF)</p> <p>Security</p> <p>IEEE 802.1X Port Based Network Access Control RFC 1492 TACACS+ RFC 2865 RADIUS (client only) RFC 2866 RADIUS Accounting Secure Sockets Layer (SSL) SSHv1/SSHv2 Secure Shell</p>

HP ProCurve Switch 3500 Series accessories

Modules

HP ProCurve Switch y1 10-GbE 2-Port CX4 + 2-Port X2 Module (J8694A)

NEW HP ProCurve 2-Port SFP+/ 2-Port CX4 10GbE y1 Module (J9312A)

License

HP ProCurve Premium License for Switch 3500 Series (J8993A)

EPS/RPS

HP ProCurve 620 Redundant/External Power Supply (J8696A)

NEW HP ProCurve 630 Redundant/External Power Supply (J9443A)

Transceivers

HP ProCurve 10-GbE X2-SC ER Optic (J8438A)

HP ProCurve 10-GbE X2-SC LR Optic (J8437A)

HP ProCurve 10-GbE X2-SC LRM Optic (J9144A)

HP ProCurve 10-GbE X2-SC SR Optic (J8436A)

HP ProCurve 10-GbE CX4 Media Converter (J8439A)

HP ProCurve 10-GbE X2-CX4 Transceiver (J8440B)

HP ProCurve 100-FX SFP-LC Transceiver (J9054B)

HP ProCurve 100-BX-D SFP-LC Transceiver (J9099B)

HP ProCurve 100-BX-U SFP-LC Transceiver (J9100B)

HP ProCurve 10-GbE SFP+ SR Transceiver (J9150A)

HP ProCurve 10-GbE SFP+ LR Transceiver (J9151A)

HP ProCurve 10-GbE SFP+ LRM Transceiver (J9152A)

HP ProCurve Gigabit-LH-LC Mini-GBIC (J4860C)

HP ProCurve Gigabit-SX-LC Mini-GBIC (J4858C)

HP ProCurve Gigabit-LX-LC Mini-GBIC (J4859C)

HP ProCurve 1000-BX-D SFP-LC Mini-GBIC (J9142B)

HP ProCurve 1000-BX-U SFP-LC Mini-GBIC (J9143B)

Cables

HP ProCurve 10-GbE SFP+ 1m Direct Attach Cable (J9281B)

HP ProCurve 10-GbE SFP+ 3m Direct Attach Cable (J9283B)

HP ProCurve 10-GbE SFP+ 7m Direct Attach Cable (J9285B)

NEW HP ProCurve 10-GbE XFP-SFP+ 1m Direct Attach Cable (J9300A)

NEW HP ProCurve 10-GbE XFP-SFP+ 3m Direct Attach Cable (J9301A)

NEW HP ProCurve 10-GbE XFP-SFP+ 5m Direct Attach Cable (J9302A)

Software

HP ProCurve Manager 3.0 (-)



Products within this series have achieved sufficient scores in each of the rated criteria to achieve the Miercom Certified Green distinction Award. See the Specifications section of this series for more information.

Technology for better business outcomes

To learn more, visit www.hp.com/go/procurve

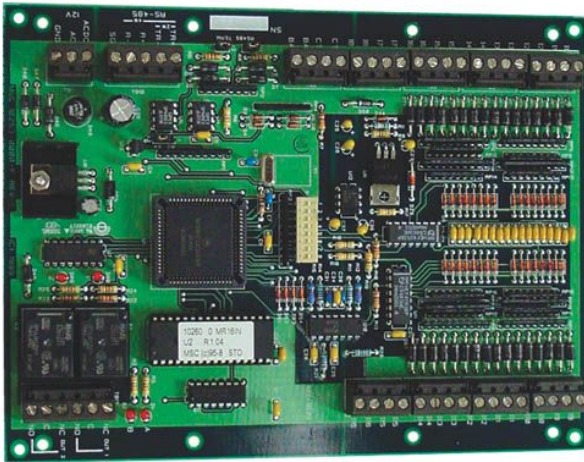
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4AA2-6758ENN Rev. 1, February 2010





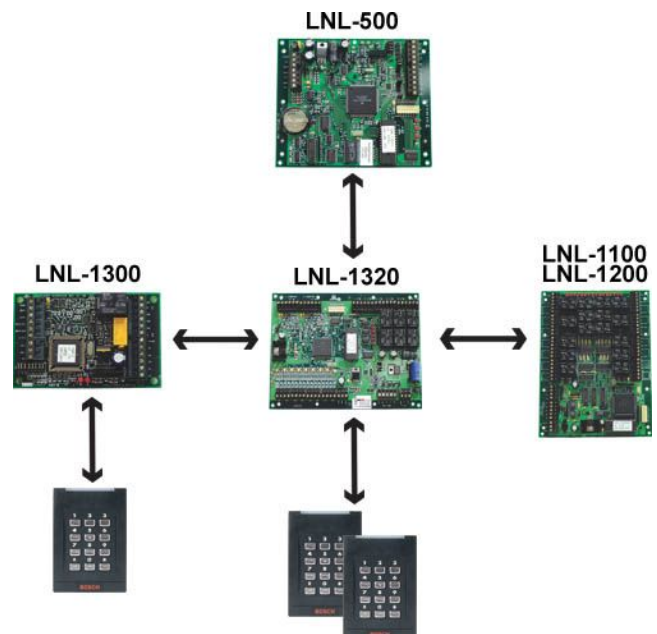
LNL-1100 Input Control Module



The LNL-1100 Input Control Module (ICM) communicates with the Intelligent System Controller (ISC). It quickly acknowledges critical alarm points in monitored areas of a ReadykeyPRO system. The LNL-1100 features sixteen configurable input control points and two output control relays. It supports normally-open, normally-closed, supervised, and un-supervised circuits.

- ▶ Sixteen programmable input contacts supervised or un-supervised
- ▶ RS-485 communications, multi-dropped (two-wire or four-wire)
- ▶ Two 5 A, 30 VDC Form C contacts for load switching
- ▶ Elevator tracking for up to sixteen floors (each board)
- ▶ Status LED for host communication and heartbeat

System Overview



LNL-500 Intelligent System Controller (ISC)

Two two-wire ports or one four-wire port. Communicates with the PC through Ethernet TCP/IP networks (requires LNL-ETHLAN-MICR), RS-232 or RS-485 configurations, or modem dial-up.

LNL-500 Intelligent System Controller (ISC)

LNL-1100 Input Control Module

Sixteen software configurable inputs and two configurable Form C relay outputs. Communicates with the LNL-500 through two-wire or four-wire RS-485 configurations.

LNL-1200 Output Control Module

Sixteen configurable output relays. Communicates with the LNL-500 through two-wire or four-wire RS-485 configurations.

LNL-1300 Single Reader Interface Module

Door and Request-to-exit (REX) inputs normally-open (NO), one lock output relay, and one auxiliary output relay. Communicates with the LNL-500 through a two-wire RS-485 configuration.

LNL-1320 Dual Reader Interface Module

- Two Request-to-exit (REX) inputs normally-open (NO)
- Two door inputs normally-closed (NC)
- Two software configurable auxiliary inputs per reader
- One dedicated lock output per reader
- Two software configurable auxiliary outputs per reader

Communicates with the LNL-500 through two-wire or four-wire RS-485 configurations.

- Four-wire communication is Belden 9842 or equivalent
- Plenum cabling is Belden 88102 or equivalent

Functions

Alarm Inputs and Outputs

There are sixteen configurable alarm inputs for monitoring alarm devices. Each input point can also be programmed as normally-open (NO) or normally-closed (NC) in combination with supervised or un-supervised wiring. Two additional un-supervised inputs supply the status for cabinet tampering and power failure.

There are two output relays for configuring for fail-safe or fail-secure operation. Each relay supports on, off, and pulse ReadykeyPRO software commands.

Elevator Control

Used for floor tracking. Each LNL-1100 can support 16 floors.

Certifications and Approvals

UL Standards	UL294, Access Control System Units
Approvals	CE

Installation/Configuration Notes

Connection Considerations

RS-485: 4000 ft (1200 m) maximum

- Two-wire communication is Belden 9841 or equivalent

Technical Specifications

Alarm Inputs

Cabinet Tamper Monitor:	One un-supervised, dedicated
Power Failure Monitor:	One un-supervised, dedicated
Software Configurable:	16 supervised inputs All require end-of-line (EOL) resistors with 1000 Ω , 1% tolerance

Board

Dimensions:	8 in. X 6 in. X 1 in. (20 cm x 15 cm x 2.5 cm)
Weight:	10 oz (0.3 kg)
Indicators	Two status LEDs

Communications

Port 1:	RS-485 (two-wire or four-wire), 2400 to 38400 bps async
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Connections

Inputs:	Twisted pair, 30 Ω maximum
Outputs:	As required for the load
Power:	Twisted pair, 18 AWG (1.2 mm)
RS-485:	Twisted pair(s) with shield, 24 AWG (0.6 mm) minimum

Environmental Considerations

Relative Humidity:	0% to 95%, non-condensing
Temperature (Operating):	+32°F to +158°F (0°C to +70°C)
Temperature (Storage):	-67°F to +185°F (-55°C to +85°C)

Power Requirements

Backup Battery:	3 V Lithium, type BR2325
Input (AC):	12 VAC \pm 15%, 350 mA RMS
Input (DC):	12 VDC \pm 15%, 500 mA
Alarm Outputs	2 Form C relay contacts, 5 A, 30 VDC or 125 VAC, resistive

Ordering Information

LNL-1100 Input Control Module	LNL-1100
Communicates with the LNL-500 Intelligent System Controller (ISC). Has 16 input control points, and two output control points. Acknowledges critical alarm points in monitored areas.	

Hardware Accessories

RK-CTX Enclosure	RK-CTX
Does not include a power supply. Supports two ReadykeyPRO Access Control Modules.	

Ordering Information

RK-CTX-6 Large Enclosure with Lock	RK-CTX-6
UL Listed hardware enclosure that measures 18 in. x 24 in. x 4.5 in. (45.7 cm x 61 cm x 11.4 cm). Includes lock and tamper switch. Supports up to six ReadykeyPRO Access Control Modules (UL Approved).	
LNL-CAM1 Replacement Lock and Key Set	LNL-CAM1
A replacement lock assembly and key set for standard power supply enclosures.	

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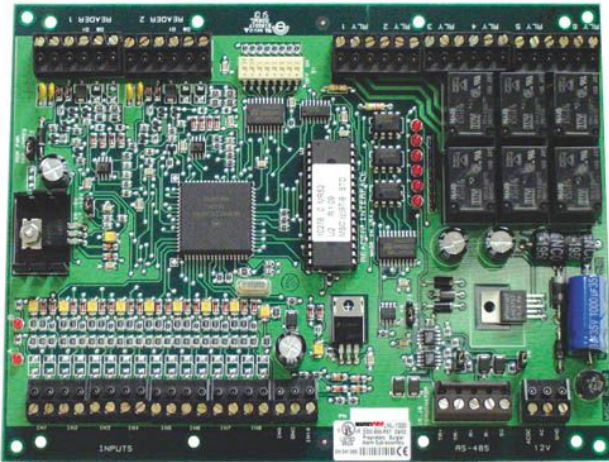
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LNL-1320 Dual Reader Module

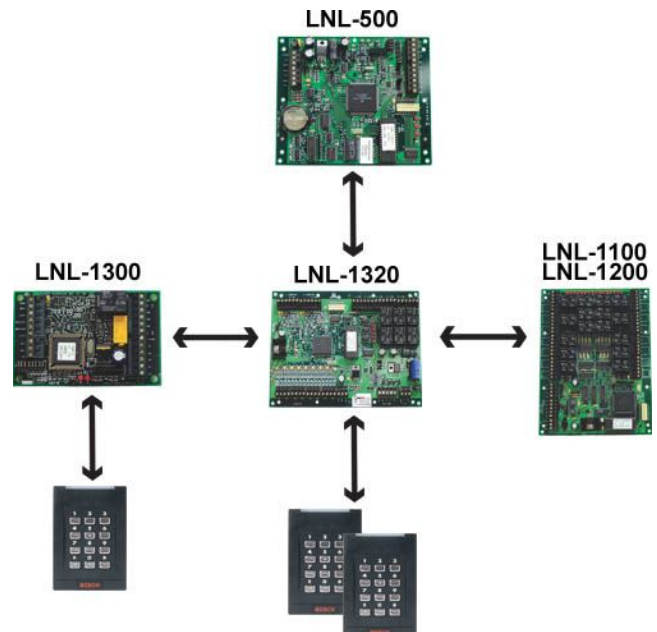


- ▶ Supports clock and data or Wiegand Data1 and Data0 reader communications
- ▶ Over 75 different readers approved for use
- ▶ Up to eight different card formats
- ▶ Supports the issue codes for magnetic and Wiegand formats
- ▶ Door Strike output
- ▶ Red status LEDs
- ▶ RS-485 two-wire or four-wire interface
- ▶ Elevator control for six floors

The LNL-1320 Dual Reader Interface (DRI) Module attaches to specific card reader devices. The interface is the communications link between the Intelligent System Controller (ISC) and the card reader.

The LNL-1320 DRI is compatible with personal identification number (PIN) keypads or access control card readers. It also works with the access control card readers that include PIN keypads with either standard Wiegand Data1 and Data0 or clock and data reader communications.

System Overview



LNL-500 Intelligent System Controller (ISC)

Two two-wire ports or one four-wire port. Communicates with the PC through Ethernet TCP/IP networks (requires LNL-ETHLAN-MICR), RS-232 or RS-485 configurations, or modem dial-up.

LNL-500 Intelligent System Controller (ISC)

LNL-1100 Input Control Module

Sixteen software configurable inputs and two configurable Form C relay outputs. Communicates with the LNL-500 through two-wire or four-wire RS-485 configurations.

LNL-1200 Output Control Module

Sixteen configurable output relays. Communicates with the LNL-500 through two-wire or four-wire RS-485 configurations.

LNL-1300 Single Reader Interface Module

Door and Request-to-exit (REX) inputs normally-open (NO), one lock output relay, and one auxiliary output relay. Communicates with the LNL-500 through a two-wire RS-485 configuration.

LNL-1320 Dual Reader Interface Module

- Two Request-to-exit (REX) inputs normally-open (NO)
- Two door inputs normally-closed (NC)
- Two software configurable auxiliary inputs per reader
- One dedicated lock output per reader
- Two software configurable auxiliary outputs per reader

Communicates with the LNL-500 through two-wire or four-wire RS-485 configurations.

- Four-wire communication is Belden 9843 or equivalent
- Plenum cabling is Belden 88102 or equivalent

Functions

Alarm Inputs and Alarm Outputs

Four different inputs per reader. A set of dedicated inputs are used for REX, normally-open and normally-closed door status. Two auxiliary inputs can be configured as NO, NC, supervised or un-supervised. Two additional un-supervised inputs supply the status for cabinet tamper and power failure.

There are three Form C relay outputs per reader. One output is a dedicated strike output and the other two outputs are software configurable.

Elevator Control

Restricts or allows the ability to access specific floors. Up to six floors and one cab reader can be controlled with one LNL-1320 DRI Module.

Certifications and Approvals

UL Standards UL294, Access Control System Units

Approvals CE

Installation/Configuration Notes

Connection Considerations

RS-485: 4000 ft (1200 m) maximum

- Two-wire communication is Belden 9842 or equivalent

Technical Specifications

Alarm Inputs and Outputs

Cabinet Tamper Monitor:	One un-supervised, dedicated
EOL Resistors:	2 x 1 kΩ resistor per supervised input
Power Failure Monitor:	One un-supervised, dedicated
Alarm Outputs:	Four auxiliary Form C outputs (two per reader) rated at 5 A; 30 VDC resistive

Board

Dimensions:	8 in. x 6 in. x 1 in. (20 cm x 15 cm x 2.5 cm)
Weight:	16 oz (0.5 kg)
Indicators	Two status LEDs

Communications

Port 1:	RS-485 (two-wire or four-wire) 2400 to 38400 bps async
---------	--

Connections

Inputs:	Twisted pair, 30 Ω maximum
Power:	Twisted pair, 18 AWG (1.2 mm)
RS-485:	Twisted pair(s) with shield 24 AWG (1.2 mm) minimum

Environmental Considerations

Relative Humidity:	0% to 95%, non-condensing
Temperature (Operating):	+32°F to +158°F (0°C to +70°C)
Temperature (Storage):	-67°F to +185°F (-55°C to +85°C)

Power Requirements

Backup Battery:	3 V Lithium, type BR2325
Input (AC):	12 VAC ± 15%, 600 mA RMS
Input (DC):	12 VDC ± 15%, 450 mA
Reader Output:	Regulated Mode, 80 mA per reader

Ordering Information

LNL-1320 Dual Reader Module	LNL-1320
Hardware Accessories	
LNL-CAM1 Replacement Lock and Key Set A replacement lock assembly and key set for standard power supply enclosures.	LNL-CAM1
RK-CTX Enclosure Does not include a power supply. Supports two ReadykeyPRO Access Control Modules.	RK-CTX

Ordering Information

RK-CTX-6 Large Enclosure with Lock	RK-CTX-6
UL Listed hardware enclosure that measures 18 in. x 24 in. x 4.5 in. (45.7 cm x 61 cm x 11.4 cm). Includes lock and tamper switch. Supports up to six ReadykeyPRO Access Control Modules (UL Approved).	

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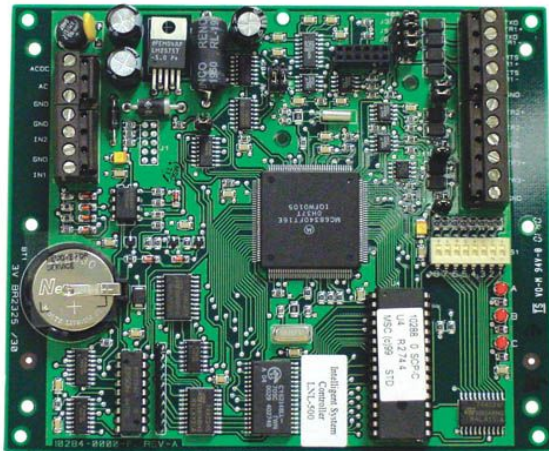
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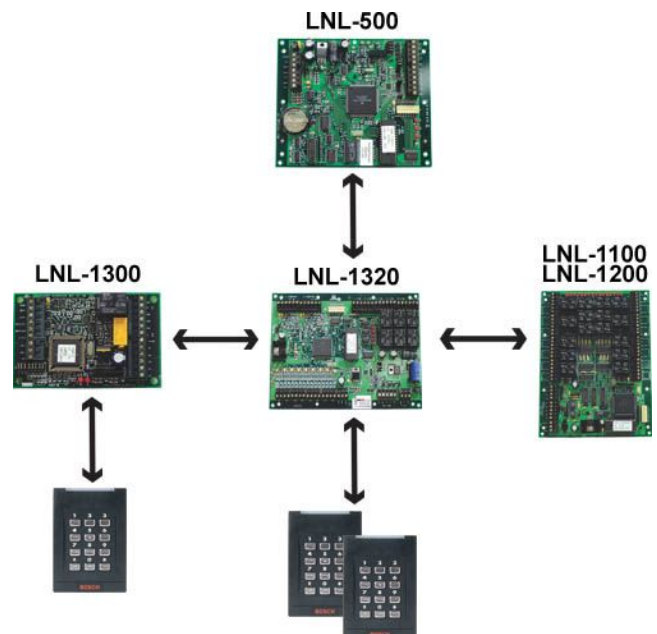
LNL-500 Intelligent System Controller (512KB)



- ▶ Eight different card formats
- ▶ 255 access levels
- ▶ 255 holidays with grouping
- ▶ 255 time zones
- ▶ Elevator control with tracking for up to 64 floors
- ▶ Up to nine-digit personal identification number (PIN) code support
- ▶ Lithium battery backup
- ▶ Alarm masking
- ▶ Flashable firmware
- ▶ Status light emitting diodes (LEDs)

The LNL-500 Intelligent System Controller (ISC) provides real-time processing for the ReadykeyPRO input and output (I/O) interfaces such as a computer running RKP6200-S32 Server Software and ReadykeyPRO hardware modules. The LNL-500 ISC provides power, performance, and flexibility for the most demanding applications. Connect combinations of ReadykeyPRO Input Control Modules, Output Control Modules, and Card Reader Interface Modules to a single LNL-500 ISC. Each module uses one unique device address.

System Overview



LNL-500 Intelligent System Controller (ISC)

Two two-wire ports or one four-wire port. Communicates with the PC through Ethernet TCP/IP networks (requires LNL-ETHLAN-MICR), RS-232 or RS-485 configurations, or modem dial-up.

LNL-500 Intelligent System Controller (ISC)**LNL-1100 Input Control Module**

Sixteen software configurable inputs and two configurable Form C relay outputs. Communicates with the LNL-500 through two-wire or four-wire RS-485 configurations.

LNL-1200 Output Control Module

Sixteen configurable output relays. Communicates with the LNL-500 through two-wire or four-wire RS-485 configurations.

LNL-1300 Single Reader Interface Module

Door and Request-to-exit (REX) inputs normally-open (NO), one lock output relay, and one auxiliary output relay. Communicates with the LNL-500 through a two-wire RS-485 configuration.

LNL-1320 Dual Reader Interface Module

- Two Request-to-exit (REX) inputs normally-open (NO)
- Two door inputs normally-closed (NC)
- Two software configurable auxiliary inputs per reader
- One dedicated lock output per reader
- Two software configurable auxiliary outputs per reader

Communicates with the LNL-500 through two-wire or four-wire RS-485 configurations.

Functions**Inputs**

Two un-supervised normally-closed (NC) inputs supply the status for cabinet tampering and power failure.

Elevator Control

Allows or restricts a person's access to specific floors. Control up to 64 floors with an LNL-1300 Single Reader Interface module and a combination of LNL-1200 Output Modules.

Anti-passback

This function works when a person attempts to exit an area and enter another area. Before the person can use another entry reader to access another area, the card holder must provide the exit reader with a valid credential (card, key fob, or adhesive tag).

Extended Read Time Control

- **Extended Strike Time:** Selectable by person. This feature extends the normal strike time by a pre-programmed amount of time from 0 to 255 seconds. The time can be separately programmed for each reader.

- **Extended Door-held-open Time:** Selectable by person. This feature extends the normal time a door may be held open after a valid card read by a pre-programmed amount of time from 0 to 255 seconds. The time can be separately programmed for each reader.

Certifications and Approvals

UL Standards	UL294, Access Control System Units
Approvals	CE

Installation/Configuration Notes**Compatibility Information**

Readers	D8222 Wiegand Key Insert Reader D8223 Prox Pro Reader D8223-P Pro Pro PIN Reader D8224-SP Switchplate Reader D8225 Mini Mullion Reader R10 iCLASS Mullion Reader R40 iCLASS Switchplate Reader RK40 iCLASS PIN Reader WP644B Weatherproof Pass-through Reader WP644W Weatherproof Pass-through Reader
Modules	LNL-1100 Input Control Module LNL-1200 Out Control Module LNL-1300 Single Reader Interface Module LNL-1320 Dual Reader Interface Module
Multiplexers	LNL-8000 Star Multiplexer
System	ReadykeyPRO

Connection Considerations**RS-485:**

- Two-wire communication is Belden 9842 or equivalent
- Four-wire communication is Belden 9843 or equivalent
- Plenum cabling is Belden 88102 or equivalent

Technical Specifications

Alarm Inputs

Cabinet Tamper Monitor:	One un-supervised, dedicated
Power Failure Monitor:	One un-supervised, dedicated

Board

Dimensions:	6 in. x 5 in. x 1 in. (15 cm x 13 cm x 2.5 cm)
Weight:	8 oz (0.2 kg)
Indicators:	Three status LEDs
RAM/Memory:	512KB

Communications

Dial-up (modem):	38.4 kbps
Interfaces:	One RS-232/RS-485 Two downstream RS-485 One RJ45 (10 Base T) Ethernet for LAN support
Microprocessor:	32-bit

Connections

Inputs:	Twisted pair, 30 Ω maximum
Outputs:	As required for load
Power:	Twisted pair, 18 AWG (1.2 mm)
RS-485:	24 AWG (0.6 mm) minimum twisted pair(s) with shield, 4000 ft (1219 m) maximum Belden 9842 or equivalent for two-wire or 9843 or equivalent for four-wire

Environmental Considerations

Relative Humidity:	0% to 95%, non-condensing
Temperature (Operating):	+32°F to +158°F (0°C to +70°C)
Temperature (Storage):	-67°F to +185°F (-55°C to +85°C)

Number Of...

Users:	Up to 13,000 badge Ids
Events:	Up to 25,000
Readers:	32 readers (16 addressable devices)

Power Requirements

Backup Battery:	3 V Lithium, type BR2325
Input (AC):	12 VAC \pm 15%, 400 mA RMS
Input (DC):	12 VDC \pm 15%, 250 mA

Ordering Information

LNL-500 Intelligent System Controller (512KB) Controls RKP6200-S32 Server Software and ReadykeyPRO hardware modules.	LNL-500
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Ordering Information

Hardware Accessories

HOC-56KEXT Communications Cable A cable that connects the LNL-500 to the LNL-56KEXT or LNL-DC336K dial-up modem.	HOC-56KEXT
HOC-BC00301 Host-to-modem Cable A 6 ft (1.8 m) long nine-pin female to 25-pin male PC-to-modem cable.	HOC-BC00301
HOC-ETHLAN Communications Cable A communications cable that connects the LNL-500 to host communications devices (see LNL-ETHLAN micro serial server).	HOC-ETHLAN
LNL-CAM1 Replacement Lock and Key Set A replacement lock assembly and key set for standard power supply enclosures.	LNL-CAM1
RK-CTX Enclosure Does not include a power supply. Supports two ReadykeyPRO Access Control Modules.	RK-CTX
RK-CTX-6 Large Enclosure with Lock UL Listed hardware enclosure that measures 18 in. x 24 in. x 4.5 in. (45.7 cm x 61 cm x 11.4 cm). Includes lock and tamper switch. Supports up to six ReadykeyPRO Access Control Modules (UL Approved).	RK-CTX-6
RKP-DEMO Hardware Demo Case Demo case containing one intelligent system con- troller, two dual reader interface modules, three readers, and assorted hardware and credentials.	RKP-DEMO
RKP-DEMO CASE Shipping Case Padded shipping case for the RKP-DEMO Hard- ware Demo Case.	RKP-DEMO CASE
LNL-2DRKIT RKP-2 Controller Kit Contains one power supply, intelligent system controller, and one dual reader interface module.	LNL-2DRKIT

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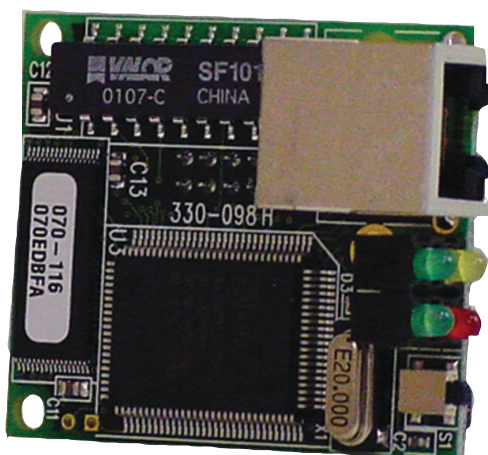
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LNL-ETHLAN-MICR Micro-Serial Server



The LNL-ETHLAN-MICR Micro-Serial Server connects local-area network (LANs) or wide-area networks (WANs) to the Intelligent System Controller (ISC).

System Overview

The LNL-ETHLAN-MICR Micro-Serial Server plugs directly into the LNL-500 Intelligent System Controller (ISC).

Functions

Ethernet Connectivity

The Micro-Serial Server is compatible with Ethernet version 2.0 or IEEE 802.3.

IP Protocol Stack

The following IP protocols are compatible with the Micro-Serial Server: ARP, UDP, TCP, SNMP, DHCP, TFTP.

Management

The Micro-Serial Server provides management via HTTP, SNMP (read only), Serial login, and Telnet login.

Flash ROM

Flash ROM is standard on the server. The LNL-ETHLAN-MICR Micro-Serial Server downloads programming from a TCP/IP host (TFTP) or over a serial port.

- ▶ Mainstream Ethernet connectivity
- ▶ Data transmission of 10/100 Mbps
- ▶ Flexible, well-developed IP protocol stack
- ▶ Internal web server, serial, Telnet, and SNMP management
- ▶ Flash ROM for easy software upgrade

Technical Specifications

Controls

Flow: XON/XOFF; CTS/RTS

Modem: DTR, RTS, CTS, DCD

Data Transmission Rates: 10/100 Mbps

Environmental Considerations

Temperature (Operating): +32°F to +158°F
(0°C to +70°C)

Temperature (Storage): -40°F to +185°F
(-40°C to +85°C)

Interface

Indicators: Diagnostic LEDs: Transmit data, Receive data, and Good link

Networking: RJ45 (10/100 Base-T)

Serial: TTL level (Asynchronous)

Memory

Flash ROM: 128 kB

RAM: 128 kB

NVRAM: 512 B

Micro-Serial Server

Dimensions: 1.6 in. x 1.9 in. (4 cm x 4.9 cm)

Power Requirements

Current (Maximum):	200 mA
Voltage (Input):	5 VDC \pm 5%

Serial Line Formats

Characters:	7 or 8 data bits
Parity:	Odd, even, none
Stop Bits:	1 or 2

Ordering Information

LNL-ETHLAN-MICR Micro-Serial Server

Connects local-area network (LANs) or wide-area networks (WANs) to the Intelligent System Controller (ISC).

LNL-ETHLAN-MICR

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Intelligent IP Video Surveillance

Omnicast™ is the ideal solution for organizations requiring a unified management of security video, audio and data via IP networks. With the introduction of innovations such as the Virtual Matrix, fully fault-tolerant software and city wide surveillance, Omnicast has proven to be the solution of choice in numerous markets including homeland, enterprise, public, and VIP security.



OMNICAST



GENETEC

Innovative Features

Genetec introduces unique concepts within Omnicast™ that redefine physical security. Discover some of Omnicast's most innovative features.



Federation™ — Omnicast's Federation makes city wide surveillance a reality by allowing multiple independent Omnicast systems from numerous organizations to be managed as if it were a single unified system. The Federation™ allows security to transcend organizational and geographic boundaries.

Metadata Engine — The Metadata Engine redefines security data management. Data from multiple sources, such as video analytics, license plate recognition and access control, is collected by the Metadata Engine and indexed to the relevant video/audio sequence(s), enabling intelligent queries and detailed real-time event information.

Failover and Redundancy — Omnicast's failover and redundancy features ensure access to all live and archived data at all times. Failover servers can automatically assume all functions of a failed component while redundant servers continuously record all or only high priority camera feeds.

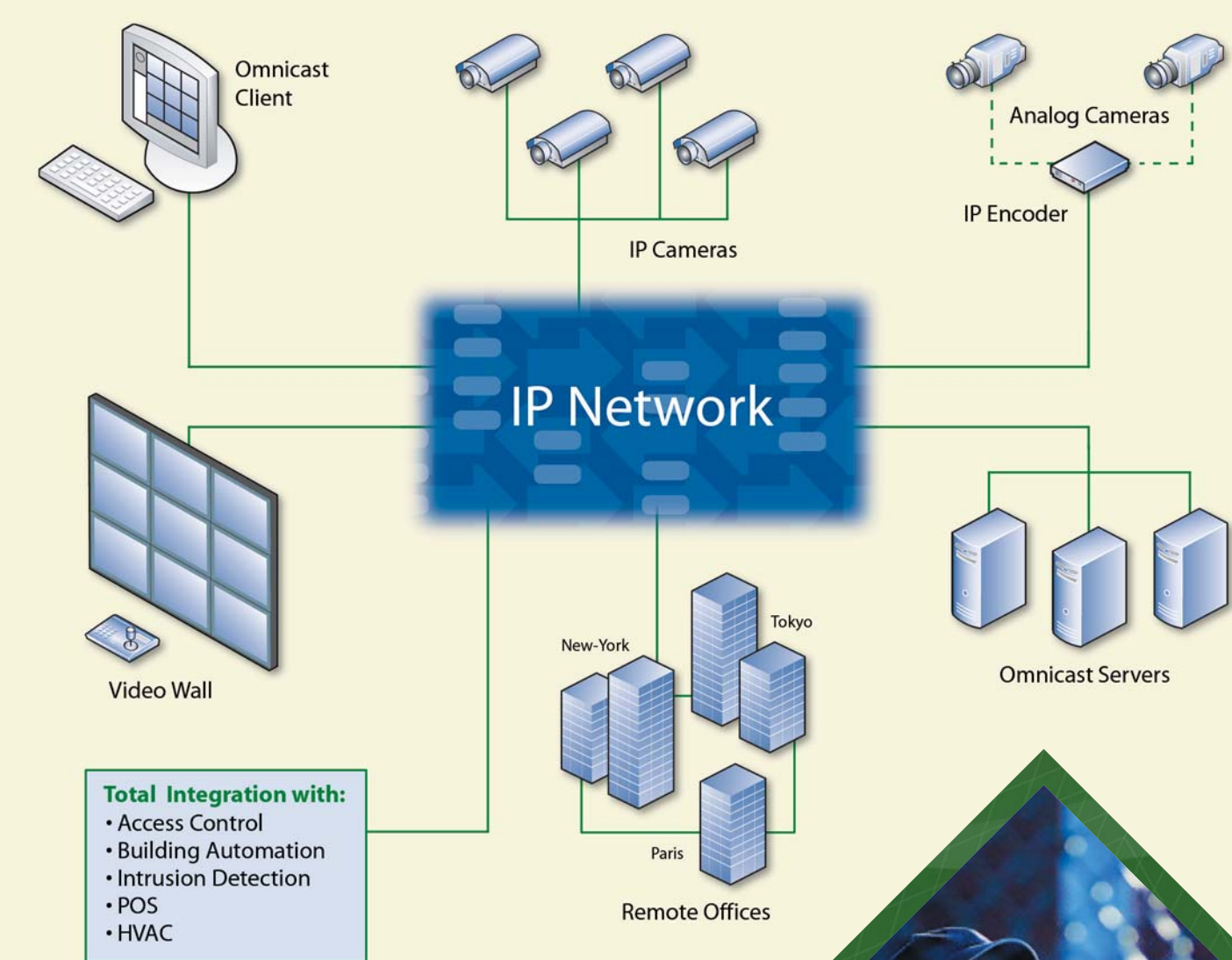
IP Intercom — Leveraging Omnicast's IP architecture, audio can be transmitted over standard LANs, WANs or even the Internet, through Omnicast's IP Intercom feature. The IP Intercom is an innovative and easy to use audio recording and vocalization tool providing two-way audio communication.

Video Analytics Technologies — Revolutionary video analytics technologies offer users unparalleled intelligence with sophisticated object and human detection and identification capabilities. From abnormal behavior recognition to access tailgating to object left detection, video analytics technologies can be used to generate specific and actionable alarms.

Integrity Safeguards — Omnicast offers multiple security features to safeguard against tampering, interception and distortion of video along with unauthorized access to the system. Technologies employed include 128 bit SSL encryption on all communications as well as an integrated digital signature that uniquely identifies each video frame.

Solution Diagram

The IP network is central to Omnicast's architecture, providing end-to-end connectivity from camera to workstation across the world.





Benefits that scale

From one location to city wide surveillance

Unequaled Scalability

With Omnicast™ you can add cameras, workstations or any other component of the system anywhere on the network, at any time. Systems can grow from a single camera to tens of thousands of cameras, one camera at a time. In addition to simple camera counts, Omnicast redefines scalability with its revolutionary Federation™ concept. With Federation, large scale city-wide surveillance is now a reality.

Unmatched Reliability

Omnicast is specifically designed with no single point of failure. This design, coupled with Omnicast's innovative failover and redundant technologies, provides users with a system unmatched in terms of reliability. Omnicast offers you peace of mind by ensuring that your system is up and running at all times.

Layout Flexibility

Video, audio and other data can be transmitted over existing wired and wireless IP networks, ranging from cat-5 to wireless technologies, such as WIFI. This multitude of transmission options allow you to control cameras placed in extremely remote locations and to manage cameras located all over the world from a central location.

Unified Security Platform

Omnicast's open platform enables the management of various systems including access control, HVAC, building automation, point of sale and video analytics technologies. Omnicast's revolutionary Metadata Engine brings integration to an entirely new level by consolidating information from numerous sources and transforming it into intelligence.

Hardware Freedom

Omnicast offers you the freedom of selecting hardware that best suits your needs. Whether you require IP, analog or other camera types, Omnicast has the capability of managing all these technologies. This flexibility even enables integration with legacy CCTV equipment, meaning you can leverage your previous investments while upgrading to the latest security technologies.

Powerful Applications

Omnicast offers an array of applications tailored to match and surpass today's security professional's requirements through easy to use interfaces.



Live Viewer — Omnicast's™ Live Viewer application serves as the control and monitoring center of your entire security system.

Archive Player — Omnicast's Archive Player offers quick and effective retrieval and playback of all stored video, audio and data.

Config Tool — The Config Tool application provides an intuitive interface that enables users to manage and configure various components of the Omnicast system such as sites, users, archiving schedules, recordings and various other devices.

Web Client — Omnicast's Web Client application provides unlimited remote access to all live and archived video, audio and data.

Report Viewer — Offering seven standard report options, the Report Viewer provides a customizable and easy to use reporting tool ensuring administrators are continually aware of all aspects of their security system.

Pocket PC Viewer — Omnicast's Pocket PC Viewer provides users with wireless, mobile video.

Map Editor — The Map Editor enables users to create interactive maps through a simple drag-and-drop function allowing users to easily control system functions including PTZ controls and alarms.



Specifications

Video

- MPEG-4 / MPEG-2 / MJPEG compression
- Bandwidth managed from 8 Kbits/s to 10 Mbits/s per camera
- Up to 60 fps per camera
- Resolution from 176x120 to multi megapixel
- IP and analog camera support

Transmission

- Video and audio transported over any IP network
- IP Multicast minimizes bandwidth use
- Wireless connectivity over 802.11a/b/g or cellular
- Remote access via DSL, cable, cellular, ISDN, T1 or T3

Display

- Up to 16 simultaneous live cameras displayed per digital monitor
- Unlimited digital monitor support
- Analog video wall support
- Unlimited remote sites managed from one unified interface
- Instant replay capability on any camera
- Digital zoom for clear identification
- Touch screen supported and optimized
- Overlay PTZ Control

Storage

- Distributed archiving allows for unlimited storage
- Archiving performed using standard storage technology
- Multi-Stream technology allows for independence of storage and live display settings
- Intelligent search capabilities based on meta-data, date/time, events, bookmarks and motion
- Schedules based on sunrise/sunset, meta-data, time/date, event, motion

Integration

- Over 30 PTZ control protocols
- Synergis IP Access Control Solution
- IP LPR Solution
- Intellivision Video Analytics Solution
- Major third party access control systems
- Building Automation
- Point of (Sale POS)
- Heating, Ventilating & Air Conditioning systems
- CCTV Matrix Switches and Keyboards
- DVR

Audio

- Full duplex IP intercom
- Multiple audio protocols supported



I Choose Omnicast

The ideal video solution for homeland, enterprise and public security



OMNICAST

About Genetec

Genetec Inc., incorporated in 1997, is a pioneer in IP video surveillance solutions and a leader within the physical security industry. Based in Montreal, Genetec is an international organization with a presence in various cities worldwide including Paris and Dubai. This global network enables Genetec to effectively serve the North American, European and Middle Eastern markets. Genetec's success is built on its dynamic team of highly skilled individuals dedicated to the development of tomorrow's cutting edge security technologies.

Genetec is recognized as an innovator in IP security products and related services through the creation of revolutionary solutions that are both reliable and user-friendly. As one of its core values, Genetec demonstrates a commitment to customer care unmatched within the industry. Hundreds of organizations worldwide trust Genetec's solutions to safeguard their assets and personnel.



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DELLTM POWEREDGETM 2950 III SERVER



The rack-optimized, Intel-based, two-socket 2U Dell PowerEdge 2950 III server delivers a balance of performance, availability and flexibility for organizations of any size.

START YOUR SEARCH WITH THIS SERVER

Whether your biggest challenge is power and cooling, information security, or application performance, the general purpose PowerEdge 2950 III is a great place to start your search for a high-availability rack server.

Customers as large as Google™ and as small as a corner grocery store have found that this versatile platform offers an optimal balance between size and capability. In response to customer requests, Dell has updated this server with a host of features that help customers to optimize energy use, improve security, and boost performance.

The server can be used for a wide variety of purposes. For example, it works excellently as a messaging, database, or network infrastructure server. The server also does very well as a video streaming, virtualization, or web server.

CHOOSE SERVICES, SOLUTIONS, AND SPECIFICATIONS

To customize your server today, talk to your account manager or visit dell.com. For example, you have the freedom to choose either up to eight high-performance 2.5" or up to six low-cost 3.5" hard drives depending on what you've decided to standardize on. Then choose from the industry's widest variety of complementary hardware, software and external storage solutions.

If you are implementing unified messaging, database or storage, look at one of our corresponding solutions that leverage this server. Whether you are setting up one or thousands, the Dell services team stands ready to help. Regardless, you can trust that each server will be fully assembled and tested before we ship it directly to you.

RELY ON DELL FOR THE LATEST PROVEN TECHNOLOGIES

To help conserve energy, which is good for your budget as well as the planet, Dell was the first Tier 1 server vendor to offer a line of power-optimized servers, including the PowerEdge Energy Smart 2950. Now we are beginning to migrate components from these servers into our mainstream servers. We also have introduced real-time power monitoring in the server (not the PDU) based on the PMbus industry standard.

As reliance on computerized information has grown, so have threats related to its security. The latest PowerEdge servers are the most secure servers yet. To protect the confidentiality, integrity, and availability of data, Dell has included a variety of features, such as a Trusted Platform Module (TPM), more features within the lockable chassis, and new RAID controller cards that protect against the failure of two drives.

We offer the latest proven technology, such as a pair of quad-core Intel® Xeon® processors and a variety of network interface options. Together, these components are designed to dramatically boost performance.

Dell knows that the management of technology often costs more than the technology itself. So we've worked to include many features to simplify the task. Whether you want to work locally using USB flash drives or DVDs, or remotely via Wake-on-LAN or iSCSI boot, these servers offer greatly improved flexibility. Finally, the PowerEdge Behavioral Specification can simplify management by enforcing consistency in user interaction and hardware layout.

DELL IT INFRASTRUCTURE SERVICES

Dell brings pure execution to IT Services. The planning, implementation and maintenance of your IT infrastructure deserves nothing less. Variability in execution can compromise user productivity, IT resources and ultimately, your reputation. By utilizing our heritage of process-driven excellence, Dell Services can deliver a smarter way.

We don't claim to do everything. We focus on IT infrastructure services. And we take a customer-led approach, grounded in the philosophy that you know your business better than anyone. That's why Dell does not try to take key business decisions out of your hands, or lock you into more than you need. Instead, we apply our world-class process management and "no excuses" culture to deliver what customers today most need — flexibility and repeatable quality. That's absolute execution. That's Dell.

Assessment, Design, and Implementation Services

IT departments are continually challenged to evaluate and implement new technologies. Dell's assessment, design, and implementation services can restructure your IT environment to enhance performance, scalability, and efficiency while helping to maximize your return on investment and minimize disruption to your business.

Deployment Services

System deployment is a necessary evil that plagues nearly every organization. You must deploy new systems to help improve performance and meet user demand. With Dell's deployment services, we help simplify and speed up the deployment and utilization of new systems to maximize uptime throughout your IT environment.

Asset Recovery and Recycling Services

Proper disposal, reselling, and donation of computer equipment is a time-consuming task that typically falls to the bottom of many IT to-do lists. Dell can simplify the end-of-life processes for IT equipment in a way that can maximize value for customers.

Training Services

Arm your employees with the knowledge and skills they need to be as productive as possible. Dell offers comprehensive training services which include hardware and software training, as well as PC skills and professional development classes. With Dell training you can help improve system reliability, maximize productivity and reduce end-user requests and downtime.

Enterprise Support Services

With Dell, you can get maximum performance and availability of your Dell server and storage systems. Our Enterprise Support services offer proactive maintenance to help prevent problems as well as rapid response and resolution of problems when they do occur. We have built a robust global infrastructure that offers multiple levels of enterprise support for systems throughout your infrastructure.

To help you get the most from your Dell systems, visit www.dell.com/services.

Services vary by region.

FEATURES	DELL™ POWEREDGE™ 2950 III SERVER
Form Factor	2U rack
Processors	Up to two quad-core or dual-core Intel® Xeon® 5400, 5300, 5200, or 5100 series standard or low-volt processors at up to 3.16GHz
Front Side Bus or HyperTransport	1066 MHz or 1333 MHz Front Side Bus (FSB) (depending on the processor chosen)
Cache	Intel Xeon 5400: 2x6MB; Xeon 5300: 2x4MB; Xeon 5200: 6M; Xeon 5100: 4MB
Chipset	Intel 5000X
Memory	Up to 32GB (8 FBD DIMM slots): 512MB/1GB/2GB/4GB 667MHz Fully Buffered DIMMs (FBD) in matched pairs
Hard Drives¹	2.5 inch SAS (10K rpm): 36GB, 73GB, 146GB 2.5 inch SAS (15K rpm): 36GB or 73GB 3.5 inch SAS (10K rpm): 146GB, 300GB, 400GB 3.5 inch SAS (15K rpm): 73GB, 146GB, 300GB, 450GB 3.5 inch SATA (7.2K rpm): 160GB, 250GB, 500GB, 750GB, 1TB Mixed SAS/SATA supported in matched pairs
Max. Internal Storage	Up to 6TB via six 3.5" 750GB hot-plug SATA hard drives
Drive Bays	3 hard drive base options: 8 x 2.5" Hard Drive Option: 2.5" HD Option: up to 8 SAS HDs (10K); 4 x 3.5" Hard Drive Option: 3.5" HD Option: up to 4 SAS (10K/15K) or SATA (7.2K) drives; 6 x 3.5" Hard Drive Option: 3.5" HD Option: up to 6 SAS (10K/15K) or SATA (7.2K) drives; Peripheral bay options; Floppy Drive, DAT72 Tape Drive (not available with 6 x 3.5" hard drive base); Slim optical drive bay with choice of CD-ROM, DVD-ROM or Combo CD-RW/DVD-ROM
I/O Slots	3 PCI slots: either PCIe riser with 3 PCI Express slots [one x4 (x8 connector) and 2 x8] or 2 PCI-X 64-bit/133MHz and 1 PCI Express x8 slot
RAID Controller	Optional PERC integrated SAS/SATA daughtercard controller or adapter
External Storage	Dell Disk Storage Arrays, Dell Tape Automation, Tape Drives and Removable Disk, Dell NAS systems and Dell SANs.
Internal/External Tape Backup Options	Internal: PV100T (DAT 72) with multibay External: PowerVault™ DAT 72, 110T, 114T, 122T, 124T, 132T, 136T, 160T, ML6000, TL2000 and TL4000
Network Interfaces	Dual embedded Broadcom® NetXtreme II™ 5708 Gigabit Ethernet NIC with fail-over and load balancing. TOE (TCP/IP Offload Engine) supported on Microsoft® Windows® Server™ 2003, SP1 or higher with Scalable Networking Pack. Supports many optional single-, dual-, or quad-port 10baseT, copper, or optical add-in NICs
Power Supply	Single or redundant 750W hot-plug auto-switching 110/220V AC or redundant hot plug -48-60V 20A DC power supplies
Availability	Hot-plug hard drives, redundant power, redundant cooling; ECC, Spare Row, SDDC memory; PERC6/i integrated daughtercard with battery-backed 256MB DDR2 cache High availability failover cluster support DRAC 5/i; Support for internal tape device; Tool-less chassis; Cluster support; Battery-backed ROMB (express)
Video	Embedded ATI ES1000 with 16MB memory
Remote Management	Baseboard Management Controller with IMPI 2.0 support; optional DRAC5 (advanced capabilities)
Systems Management	Dell OpenManage™
Rack Support	Supports 4-post (Dell rack), 2-post and 3rd party Versa rails, sliding rails & cable management arm
Operating Systems	Microsoft® Windows® Server Microsoft® Windows® Storage Server Red Hat® Linux® Enterprise Novell® Netware® Novell® SUSE Linux VMware® Virtual Infrastructure

¹For hard drives, GB means 1 billion bytes and TB equals 1 trillion bytes; actual capacity varies with preloaded material and operating environment and will be less.

SIMPLIFY YOUR NETWORK AT DELL.COM/Servers





ReadykeyPRO System Overview

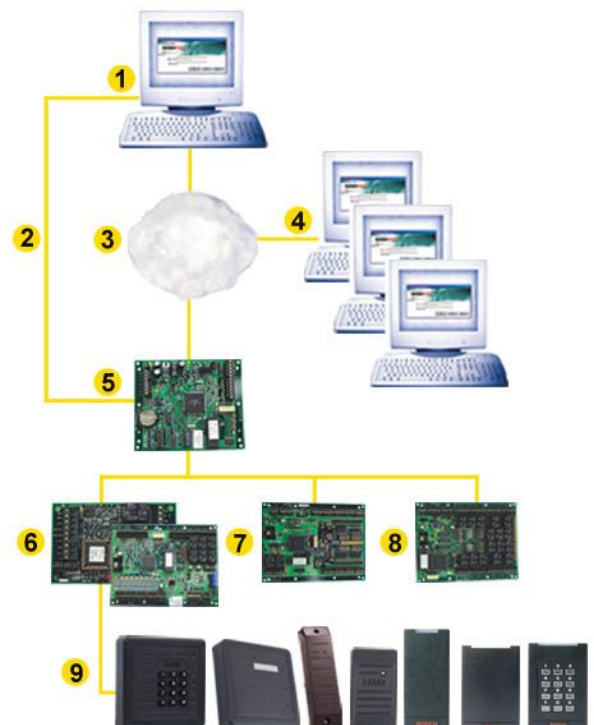
- ▶ Enhanced Imaging
- ▶ Image export
- ▶ Support for 64-bit credential (card, token, or adhesive tag) numbers
- ▶ iCLASS integration with Smart Card encoding capabilities
- ▶ Enhanced options for alarm monitor zones and credential time periods
- ▶ Global input and output (I/O)
- ▶ Global anti-passback
- ▶ Windows® XP operating system compatibility
- ▶ Support for:

ReadykeyPRO is a Microsoft® Windows® 2000 certified product designed and written by a Microsoft Certified Gold Partner. It supports industry standard databases, networks, and identification card printers.

ReadykeyPRO is an application compliant with open database connectivity (ODBC). ReadykeyPRO comes standard with an MSDE 2000 database and supports Microsoft® SQL Server 2000.

ReadykeyPRO offers streamlined database administration, advanced alarm monitoring, and flexible hardware topology. The system includes online help screens, system configuration setup wizards, and copy templates.

System Overview



1 Server

2 RS-232 connection from the server to the ISC

- 3 Ethernet TCP/IP LAN/WAN
- 4 Workstations
- 5 ISC
- 6 Reader Interfaces
- 7 Input Module
- 8 Output Module
- 9 Readers

The hardware communicates over local-area or wide-area networks (LAN or WAN), TCP/IP, RS-232, RS-485 per port, and dial-up communications. The system works with existing facility communication topology to reduce installation costs.

Each intelligent system controller (ISC) can connect to a combination of up to 16 devices. Connect single and dual reader interfaces, input control modules, and output control modules to the ISC over a 4000 ft (1219 m) per port RS-485 wire bus. The ISC uses a 32-bit processor to command all downstream modules using a 38.4 kbps communication.

Functions

Enhanced Imaging

Includes a Chromakey feature that removes a solid background from a captured image. Includes an adjustable ghosting feature that makes a photo look semi-transparent.

Image Export

Allows users to export images to a .jpg file format

Support for 64-bit Credential Numbers

Allows system administrators to specify credential identification numbers up to 18 digits. Ideal for smart cards and advanced applications.

Assign Alarm Monitoring Zones to Workstations

Assign ReadykeyPRO monitor zones to ReadykeyPRO users as well as to client workstations. Supervisors and other can log into any alarm monitoring workstation to monitor areas of responsibility.

Enhanced Credential Options

Set time periods for specific groups of users. Restrict some users to access only during regular business hours, extend access to include additional hours, or set different time periods. Set the specific time and date to deactivate a credential (card, token, or adhesive tag).

Global Anti-passback

Increases the area over which users can apply anti-passback. Configure areas that span across each ISC.

Global Input/Output Cross Controller

Configure input and output (I/O) linkages that span across each ISC. Use input actions made under one ISC to activate outputs under another ISC. Extend I/O functions across large geographic distances.

Time Zones

Create and store 255 time zones with a maximum of six intervals. Assign an interval to any day of the week. Users can also restrict an interval to a holiday.

Access Levels

Define 255 levels and assign 32 levels to each person or group.

Holidays

Assign 255 holiday dates and eight different holiday categories. Assign holidays to individual time zones.

Anti-passback

This function works when a user attempts to exit one area and enter another area. Before the user can use another entry reader to access another area, the user must provide the exit reader with a valid credential.

Two Card Control

The reader must accept the credentials of two authorized users in order to grant access.

Occupancy Limit

Places a limit on the number of authorized card holders that can simultaneously occupy an area.

Database Segmentation

Available for Expansion and PRO level systems. Requires Microsoft® SQL Server 2000. Divide each database object (access levels, alarm inputs, areas, card readers, and users) into a segment with unique parameters. For example, each segment could have 255 access levels, 255 time zones, and 255 holidays.

Note

Database segmentation is only available with Expansion or PRO level systems. Contact application support for details.

System Administration and Identification Management

Administer system-wide security and manage database inquiries. Configure client access to screens and monitoring functions. Use the log and report capabilities to retrieve operator activity, system events and database information.

Multiple Drop ISC Support

Supports a multiple-drop ISC architecture. Connect up to eight ISC units to one RS-485 communications line. All eight ISC units will communicate back to one serial communications port.

Alarm Monitoring

The monitoring screen depicts the location, time, and priority of an alarm. Locate alarms with a map, a system status tree, or an alarm menu. Sort or insert alarms based on priority, date/time, alarm description, controller, card-reader, or user.

Elevator Control

Control a user's access to specific floors. The number of floors that the administrator can control varies according to the system hardware.

Extended Read Time Control

- **Extended Strike Time**
Selectable by person. Program an amount of time from 0 to 255 seconds. Program a unique amount of time for each reader.
- **Extended Door-held-open Time**
Selectable by person. Program an amount of time from 0 to 255 seconds. Program a unique amount of time for each reader.

Alarm Masking Control

Mask (disarm) or unmask (arm) an individual input or a group of inputs. This process creates an environment that is similar to an intrusion system. The system supports 64 alarm masking groups per ISC.

Map Designer

Import image files and attach custom icons to create interactive maps of an entire facility or of a specific building/floor.

Optional Functions

CCTV Interface

Send ASCII control commands to closed circuit television (CCTV) cameras or monitors.

Badge Designer

Create custom badge designs. Badge Designer supports credit card, government, and custom identification card sizes. Badge Designer supports landscape or portrait format as well as double-sided and edge-to-edge printing.

Technical Specifications

System PC Requirements

Communication Requirements

CD-ROM:	20/48X
Floppy Disk Drive:	3.5 in., 1.44 MB
Hard Disk Drive:	10 GB, 7200 RPM, IDE
Internet Browser:	Internet Explorer 5.5 or higher
Modems:	56KBps (if dial communications are required)
Ports:	1 serial 1 USB (required for dongle or security key) <i>Add port types based on system configuration requirements as necessary</i>
TCP/IP:	10/100 Ethernet NIC

Multimedia Components

Audio with Speakers:	Windows® compatible
Keyboard:	Windows® compatible
Monitor:	1024 x 768 screen area
Mouse:	Windows® compatible
Printers:	Windows® compatible
Video Card:	16 MB

Operating System

Windows® 2000 SP4
Windows® XP SP1a only

Processor

Pentium IV® 1.5 GHz
Intel Celeron® processors are not supported

RAM/Memory

256MB

ReadykeyPRO System Specifications

Number of . . .

Access Levels:	255 standard 32,000 maximum with third party database applications
Card Holders:	5,000 standard 13,000 or more with SQL Server 2000 software
Card Readers:	64
Database Divisions (Segments):	65,000 with SQL Server 2000 Available only for Expansion and PRO level systems. Contact application support for details.
Events:	Limited according to the amount of available server database disk space

Product Overview for ReadykeyPRO

Here is a list of ReadykeyPRO products offered by Bosch Security Systems.

Hardware Options

Controller and Module Hardware

LNL-500	ISC with 512KB memory
LNL-1000	ISC with 1MB memory
LNL-1100	16 Input monitor module
LNL-1200	16 Output control module
LNL-1300	Single reader interface module

Controller and Module Hardware

LNL-1320	Dual reader interface module
LNL-8000	Star multiplexer
LNL-CONV-1	Adapter plate for single LNL-1300
LNL-CONV-4	Adapter plate for up to four double LNL-1300

Communications Hardware

HOC-56KEXT	Communications cable for 56K modem
HOC-BC00301	PC to modem cable
HOC-ETHLAN	Communications cable
LNL-837A	High speed line driver
LNL-838A	High speed line driver with optical isolation
LNL-108A	RS-232 to RS-485 converter
LNL-109A	RS-232 to RS-485 converter with optical isolation
LNL-56KEXT	56K External modem
LNL-DC336K	33.6K External modem
LNL-ETHLAN	Network module for LNL-1000
LNL-ETHLAN-MICR	Network module for LNL-500

Door Controller Kits

LNL-2DRKIT	ReadykeyPRO two-door controller kit
RKP-DEMO	Hardware demo kit
RKP-DEMOCASE	Padded shipping case for demo kit

Optional Accessories

RKP-CHROMKEY	Green-blue backdrop
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Power Supply and Enclosure Hardware

ABT-12	Battery kit
LNL-CAM 1	Lock assembly and keys
RK-AL400ULX	Enclosure with power supply (4 A)
RK-AL600ULX4CB6	Large enclosure with power supply (6 A)
RK-CTX	Enclosure without a power supply
RK-CTX-6	Large enclosure without a power supply

Printers and Accessories

MC-CLEANINGKIT	Printer cleaning kit
MC-CUSTOMKEY	Holokote custom logo setup and secure key
MC-PVCBLNK-1000	Blank PVC cards (package of 1,000)
MC-PVCSTICKY	Adhesive-backed PVC cards (package of 1,000)
MC-RIO2-MAG *	Rio Single Sided Card Printer with Mag Encoder
MC-RIO2	Rio Single Sided Card Printer
MC-RIO-YMCKO	Five-panel color dye film
MC-SECUREKEY	Holokote secure key
MC-TANGO2-MAG*	Tango Double Sided Card Printer with Mag Encoder
MC-TANGO2	Tango Double Sided Card Printer
MC-TANGO-YMCKOK	Six-panel color dye film

** ReadykeyPRO only*

Proximity Readers and Credentials

D8222	Wiegand Key Insert Reader
D8223	Prox Pro reader
D8223-P*	Prox Pro PIN reader
D8224	Mullion reader

Controller and Module Hardware

D8224-SP	Switch plate reader
D8225	Mini-mullion reader
D8232-10	Wiegand Proximity Token, 26-bit (package of ten)
D8236-10	Wiegand Proximity Card, 26-bit (package of ten)
D8236KF-10	Wiegand Proximity Token, 26-bit (package of ten)
D8236TG-10	Wiegand Proximity Adhesive Tag, 26-bit (package of ten)
D8237-50*	Wiegand Photo Identification Card, 37-bit (package of 50)
D8237KF-10*	Wiegand Proximity Token, 37-bit (package of ten)
D8237TG-10*	Wiegand Proximity Adhesive Tag, 37-bit (package of ten)

* ReadykeyPRO only

iCLASS Contactless Smart Cards and Readers

ARD-RK10	iCLASS Mullion Reader
ARD-R40	iCLASS Switchplate Reader
ARD-RK40-09*	iCLASS PIN Reader
ARD-VSMART	iCLASS V-Smart Reader
ACD-IC2K26-50	iCLASS 2K Wiegand Card, 26-bit (package of 50)
ACD-IC2K37-50*	iCLASS 2K Wiegand Card, 37-bit (package of 50)
ACD-IC16K26-50	iCLASS 16K Wiegand Card, 26-bit (package of 50)
ACD-IC16K37-50*	iCLASS 16K Wiegand Card, 37-bit (package of 50)
ACD-IC16KP26-50	iCLASS 16K Dual Wiegand Card, 26-bit (package of 50)
ACD-IC16KP37-50*	iCLASS 16K Dual Wiegand Card, 37-bit (package of 50)
ACT-IC2K26-10	iCLASS 2K Wiegand Token, 26-bit (package of ten)
ACT-IC2K37-10*	iCLASS 2K Wiegand Token, 37-bit (package of ten)
ACT-IC16K26-10	iCLASS 16K Wiegand Token, 26-bit (package of ten)
ACT-IC16K37-10*	iCLASS 16K Wiegand Token, 37-bit (package of ten)
ACA-IC2K26-10	iCLASS 2K Wiegand Adhesive Tag, 26-bit (package of ten)
ACA-IC2K37-10*	iCLASS 2K Wiegand Adhesive Tag, 37-bit (package of ten)
ACA-IC16K26-10	iCLASS 16K Wiegand Adhesive Tag, 26-bit (package of ten)
ACA-IC16K37-10*	iCLASS 16K Wiegand Adhesive Tag, 37-bit (package of ten)

* ReadykeyPRO only

Software Options**Application Software**

RKP6200-S32 ReadykeyPRO Server License for 32 Readers

Software Option for Version 5.10 or Higher

RKP6210-INT Intrusion panel interface option

Software Options for version 5.9 or higher

RKP6210-DATAX Data exchange option

RKP6210-GT Guard tour option

RKP6210-M Real-time muster reporting option

Software Options

RKP6210-32 Upgrade from 32 to 64 reader option

RKP6210-CCTV CCTV serial output option

RKP6210-CL Additional client software license

RKP6210-CPID Photo identification software license

RKP6210-EMAIL Automatic e-mail interface option

RKP6210-FD Forms designer option

RKP6210-PG Automatic paging option

RKP6210-REC Receiver option

RKP6210-VV Video verification window upgrade

Software Option Accessories

RKP6220-EC Expanded cable

RKP6220-VB Video capture board

RKP-IMAGECAPKIT Complete video capture kit

This kit includes a PCI video capture card.

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www.boschsecurity.com

Represented by



RK-AL400ULX Power Supply



- ▶ Switch selectable 12 VDC or 24 VDC power limited output
- ▶ Accommodates up to two ReadykeyPRO modules
- ▶ Bosch lock with two keys included
- ▶ Tamper switch
- ▶ Filtered and electronically regulated output
- ▶ AC fail supervision
- ▶ Class 2 rated

The RK-AL400ULX Power Supply is a power-limited supply and charger. It converts 115 VAC 60 Hz input into a non-power limited 12 VDC or 24 VDC output.

Functions

Battery Functions

- The RK-AL400ULX Power Supply has a battery charger for sealed lead acid or gel batteries (such as ABT-12).
- The RK-AL400ULX Power Supply automatically uses a standard battery if the AC source fails. The DC power remains constant during the transition from AC to a battery.
- The RK-AL400ULX Power Supply sends event messages to indicate that the battery is low or missing.

LED Indicators

The RK-AL400ULX Power Supply has light emitting diode (LED) indicators for AC input and DC output.

Certifications and Approvals

UL Standards UL294, Access Control System Units

Technical Specifications

Dimensions

Enclosure:	12 in x 16 in x 4.5 in (30.5 cm x 40.6 cm x 11.4 cm)
Power Supply Dimensions:	4.25 in x 7 in x 1.75 in (10.8 cm x 17.8 cm x 4.4 cm)

Power Requirements

Input:	115 VAC 60 Hz, 1.45A Primary circuit switch for incoming 115 VAC
Output (non-power limited):	Form C contact Switch selectable 12 VDC or 24 VDC
Supply:	Maximum charge current 0.7 A 4 A continuous supply current at 12 VDC 3 A continuous supply current at 24 VDC

Ordering Information

RK-AL400ULX Power Supply	RK-AL400ULX
Power-limited supply and charger. Converts 115 VAC 60 Hz input into a non-power limited 12 VDC or 24 VDC output.	

Hardware Accessories

RK-CTX Enclosure	RK-CTX
Does not include a power supply. Supports two ReadykeyPRO Access Control Modules.	



BOSCH
Invented for life

RK-AL600ULX4CB6 Power Supply with Large Enclosure



- ▶ Accommodates up to six ReadykeyPRO modules
- ▶ Includes RK-TCX-6 Large Enclosure with Lock
- ▶ Four individual circuit breaker outputs
- ▶ Off-line power supply mounted on a custom Bosch bracket
- ▶ Power limited distribution module
- ▶ Tamper switch
- ▶ Bosch lock with two keys
- ▶ Filtered and electronically regulated output
- ▶ AC fail supervision
- ▶ Class 2 rated

The RK-AL600ULX4CB6 Power Supply with Large Enclosure is a power-limited supply and charger. It converts 115 VAC 60 Hz input into a non-power limited 12 VDC or 24 VDC output.

Certifications and Approvals

UL Standards

UL294, Access Control System Units

Functions

Battery Functions

- The RK-AL600ULX4CB6 Power Supply with Large Enclosure has a battery charger for sealed lead acid or gel batteries (such as ABT-12).
- The RK-AL600ULX4CB6 Power Supply with Large Enclosure automatically uses a stand-by battery if the AC source fails. The DC power remains constant during the transition from AC to a battery.
- The RK-AL600ULX4CB6 Power Supply with Large Enclosure sends even messages to indicate that the battery is low or missing. Internal charger for sealed lead acid or gel type batteries (such as ABT-12).

LED indicators

The RK-AL600ULX4CB6 Power Supply with Large Enclosure has light emitting diode (LED) indicators for AC input and DC output.

Technical Specifications

Dimensions

Enclosure	24 in x 18 in x 4.5 in (61 cm x 45.7 cm x 11.4 cm)
Power Supply Dimensions	4.25 in x 7 in x 1.75 in (10.8 cm x 17.8 cm x 4.4 cm)

Power Requirements

Input:	115 VAC 60 Hz, 1.9 A Primary circuit switch for incoming 115 VAC
Output (non-power limited):	Form C contact Switch selectable 12 VDC or 24 VDC 100 mV peak output voltage ripple
Supply:	Maximum charge current 0.7 A 6 A continuous supply current at 12 VDC or 24 VDC

Ordering Information

RK-AL600ULX4CB6 Power Supply with Large Enclosure RK-AL600ULX4CB6

Power-limited supply and charger. Converts 115 VAC 60 Hz input into a non-power limited 12 VDC or 24 VDC output.

Hardware Accessories

RK-CTX Enclosure Does not include a power supply. Supports two ReadykeyPRO Access Control Modules.	RK-CTX
RK-CTX-6 Large Enclosure with Lock UL Listed hardware enclosure that measures 18 in. x 24 in. x 4.5 in. (45.7 cm x 61 cm x 11.4 cm). Includes lock and tamper switch. Supports up to six ReadykeyPRO Access Control Modules (UL Approved).	RK-CTX-6

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www.boschsecurity.com

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CHANGE
ORDER

AIA DOCUMENT G701

OWNER ☐
ARCHITECT ☐
CONTRACTOR ☐
FIELD ☐
OTHER ☐

PROJECT: Sumter County-Security Entry Vestibule		CHANGE ORDER NUMBER:	2
225 East McCollum Ave		DATE:	11-May-10
Bushnell FL 33513		ARCHITECT'S PROJECT NO.:	852
TO CONTRACTOR:	Greg Construction	CONTRACT DATE:	13-Oct-09
	9030 Fort Island Trail	CONTRACT FOR:	\$1,336,475.00
	Crystal River FL 34429		

The Contract is changed as follows:
In accordance with RFP# 154-0-2010/AT Division 17 Security Vestibule Re-Bid

Not valid until signed by the Owner, Architect and Contractor.

The original (Contract Sum) (Guaranteed maximum Price) was	\$1,336,475.00
Net change by previously authorized Change orders	\$20,062.07
The (Contract Sum) (Guaranteed maximum Price) prior to this Change order was	\$1,356,537.07
The (Contract Sum) (Guaranteed maximum price) will be (increased) (decreased) (unchanged) by this Change Order in the amount of	\$283,113.26
The new (Contract Sum) (Guaranteed maximum Price) including this Change order will be	\$1,639,650.33
The Contract Time will be (increased) decreased) (unchanged) by	0 Days
The date of Substantial Completion as of the date of this Change Order therefore is	27-Jun-10

Architecture Studio, Inc.	Greg Construction	Sumter County BOCC
ARCHITECT	CONTRACTOR	OWNER
114 S Magnolia Ave	9030 Fort Island Trail	910 N Main St, Room #201
Address	Address	Address
Ocala FL 34473	Crystal River FL 34429	Bushnell FL 33513
BY	BY	BY
DATE	DATE	DATE